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THE DUTIES OF THE GENERAL STAFF

BY THE LATE
GENERAL BRONSART VON SCHELLENDORFF.

REVISED BY
MAJOR BRONSART VON SCHELLENDORFF
(Great General Staff).

FOURTH EDITION.

1905.

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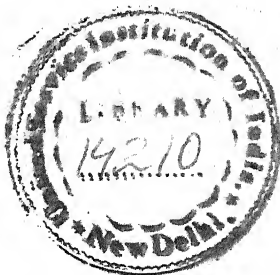
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THIS Edition of General von Schellendorff's "The Duties of the General Staff" has been translated by Major H. A. Bethell, Royal Field Artillery, Major J. H. V. Crowe, Royal Field Artillery, and Brevet Major F. B. Maurice, The Sherwood Foresters.

The reasons which led to its publication are given in the preface, and it will be noted that the work of the General Staff in War and in Peace has now been dealt with in greater detail than in previous editions.

J. M. GRIERSON,

MAJOR-GENERAL,

Director of Military Operations

GENERAL STAFF,

WAR OFFICE,

20th July, 1905.

PREFACE TO THE FOURTH EDITION.

THE preparation of this edition of my late father's work was undertaken by me in response to many requests, and I regard the task both as an honour and a duty. Although, in view of the many recent publications of a similar nature, there was possibly no pressing need for a new edition, still, a desire was evinced that the book should be saved from lapsing into oblivion, and that its original value, both historical and professional, should be preserved unimpaired.

Eleven years have elapsed since the publication of the Third Edition, a fact which rendered extensive alterations necessary. It has been found possible to omit many portions which are now embodied in our Army Regulations, and thus are matters of common knowledge; but, on the other hand, the working of the General Staff in War and Peace has been treated in still greater detail.*

I was fortunate enough to receive much valuable instruction and many suggestions from my father during the last nine years of his life, and it has been my endeavour to revise his work in accordance with his views.

I take this opportunity of thanking my colleagues for the assistance they have afforded me in my labours.

BRONSART V. SCHELLENDORFF,
Major, Great General Staff.

Berlin, Autumn, 1904.

* This is to a great extent due to Lieutenant-General von Janson's valuable work, "The Duties of the General Staff with Troops in Peace," 2nd edition. Berlin, 1901. E. S. Mittler and Son.

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PART I.

THE ORGANISATION OF THE GENERAL STAFF IN THE ARMIES OF THE GREAT POWERS.

CHAPTER I.

GENERAL STAFF DUTIES.

THE GENERAL STAFF forms an essential part of modern Army organisation. The General commanding a large body of troops cannot (and least of all in war) encumber himself with minor details, though their consideration and proper arranging may be often of the highest importance. Apart from the fact that the mental and physical powers of one man are not equal to such a task, the comprehensive supervision of the forces under his command would suffer. He should consequently have assistants. These assistants form his "*Staff*." To a certain extent, an arbitrary rule decides what portion of the latter is designated as "*General Staff*." In some Armies all the Staff belongs to the General Staff. But a necessity has universally been felt of having a distinct portion of the Staff entrusted with planning and carrying out the movements of Armies in the field, and it is generally distinguished by some special name. This particular branch of the Staff of a General holding an important command is known in the German Army as the "*General Staff*" (*Generalstab*).

The latter has grown in importance with the numerical increase of modern Armies, and the development of military training and efficiency.

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As long as Armies were small, and movements, encampments and fighting formations were laid down by hard-and-fast regulations, the want of trained General Staff officers was less felt. The plan determined on by the General in command usually contained the details of execution. But few directions were necessary to ensure the quartering, concentration and general advance against the enemy of a force in the regulation fighting formation, in the way that was intended. A departure from the generally accepted forms—such as, for instance, the advance of the Prussian Army before the Battle of Leuthen—of course necessitated special instructions to the subordinate commanders. Such measures were intended to take the enemy by surprise and be decisive, and were entirely a matter for the personal energy and initiative of the Commander.

A General Staff officer who, at that time, would have taken on himself the responsibility of departing from fixed forms in drawing up orders for marching or fighting, would have exceeded the limits of his responsibility. He would have been considered, as it were, guilty of assuming the position and duties of his General. His duty in these matters being only looked upon as strictly mechanical, could consequently be replaced by regulations, previously issued, and to be invariably adhered to. But this state of affairs no longer exists.

The enormous numerical strength of modern Armies, and the way they must be organised to meet the constantly changing requirements of war, render necessary great differences in carrying out the details of military operations even under apparently similar circumstances of time and place. Consequently the higher leaders and Commanders require a regular staff of specially selected and trained officers.

But this necessity of assistance is felt also in handling troops in action, viz., in the reconnaissance of the ground and of the dispositions and movements of the enemy, and for the observation of the tactical situation, at a point removed from the personal observation of the General Commanding.

The nature and small extent of ground covered by the

battlefields of the Seven Years' War, enabled a General, as a rule, to dispense with the assistance of specially trained officers in this respect. But the want of assistance in reconnoitring the ground on which troops were to encamp, march or fight, was even then often felt. The Great King (Frederick) says himself in his history of the Seven Years' War: "The Army has stood the test of many campaigns, but the want of a good Quartermaster-General's Staff was often felt at headquarters. The King being anxious to create a body of officers of this description, selected twelve officers who showed special aptitudes for these duties. They were instructed in surveying, laying out camps, placing villages in a state of defence and field bridging. They learned also how to guide columns marching, and especially how to reconnoitre marshes and rivers, so that they might not, by mistake or negligence, place an Army with its flank on a shallow river or a passable tract of marshy country. Mistakes of this nature have led to the most serious results. They cost the French the defeat of Malplaquet, and the Austrians that of Leuthen."

The Prince of Ligny, who at times was given to answering important questions by a facetious expression or a short definition, says the only qualities he considers necessary for an officer of the Quartermaster-General's Staff are, that he should have good eyes and be a bold rider—qualities which, as a matter of course, are now as much as ever absolutely indispensable to a young cavalry officer told off as a galloper, and naturally extremely useful to a General Staff officer as well. But, at the same time, it is evident that much more is to be expected of the General Staff officer, if he is to be equal to all emergencies.

Clausewitz says:—

"The General Staff is intended to convert the ideas of the General commanding into orders, not only conveying the former to the troops, but also working out all matters of detail, thus relieving the General from a great amount of trouble."

This definition could still be taken as amply meeting the

case were it not now considered part of the duty of the General Staff to be invariably watching over the military efficiency and material welfare of the troops. On every large Staff, it is true, all branches of the service are represented by certain individuals or heads of departments, and it is naturally their duty, in the first place, to see to the proper efficiency of their respective branches or departments. But, being often ignorant of the general military situation, or not rightly understanding sudden changes in the state of affairs, they are unable to carry out what is expected from them. The General Staff is consequently called upon to act as a directing and explaining body towards these individuals, keeping itself in constant communication with them, the Chief of the General Staff being at the same time, in a comprehensive way, the head of the whole Staff.

Officers of the General Staff are invested with no military command; it is only the General who commands and is responsible. The officers of the General Staff must be his devoted and confidential counsellors. This necessitates the General having absolute confidence in his assistants. Their usefulness will depend not only on their fitness and ability, but on their tact and discretion in rightly appreciating the position they hold both as regards General and troops. The conditions to fulfil this, however, are not entirely one-sided. Troops very soon find out, especially in war, whether the duties of the General Staff are in good hands; but this does not exclude the fact that every now and then, when the aspect of affairs takes a disadvantageous turn, responsibility is placed on the shoulders of the General Staff officer, which the circumstances of the case do not justify.

This is often one of the drawbacks of his position. Another is, that he must always deny himself the true military instinct of wishing to take command in accordance with his army rank. A good General Staff officer is therefore certainly not asking too much if he claims the complete confidence of his General, and the grant of a certain amount of independence in the details of his duty. Otherwise he would at once feel that his post might be better filled by an inferior person and he himself more advantageously employed at regimental duty.

Let us now examine the duties of the General Staff in war.

These would be :—

1. Working out all arrangements necessary for quartering, security, marches, and battle ;
2. Communicating the necessary orders, either verbally or in writing, at the right time and place, and in sufficient detail ;
3. Obtaining, collecting and compiling in order all information concerning the nature and the military character of the theatre of war, providing maps and plans ;
4. Collecting and estimating the value of information received concerning the enemy's forces ;
5. Watching over the fighting condition of the troops, and keeping himself posted as to their efficiency in every respect ;
6. Keeping journals and diaries, drawing up reports on engagements, and collecting important materials, for the subsequent history of the war ;
7. Special duties, particularly reconnaissances.

General Staff officers have to take, as a basis for carrying out their duties in all the branches that have been assigned them, the wish and determination of the General in command, in which, however, proposals by them are by no means excluded, but rather invited. A General Staff officer cannot excuse himself of any neglect on his part on the plea that no order on the subject had been given him by his General. He should only consider himself freed from responsibility when his suggestion has been declined by the General. This gives no small measure of responsibility to the General Staff officer in war, and necessitates untiring energy.

The peace duties of the General Staff should prepare it for its duties in war. Consequently, General Staff officers with commands have to work out in peace all matters of mobilisation, movements, quarters, manœuvres, railways and information.

The "Great General Staff," a body of General Staff officers who are not attached to Army Corps, is entrusted, under the immediate supervision of the Chief of the General Staff, with drawing up and preparing possible plans of operation by

arranging for the strategical concentration of the Army in certain directions by road and rail, by knowing and estimating the strength of the various European Armies, by the study of the theatres of war, and by the preparation of military maps. The General Staff also deals with the study of the art of war, especially military history, and the training of the younger officers.

The General Staff officer should, however, not be satisfied with the simple discharge of the duties assigned to him in peace time. It is his serious duty to prepare himself in every way, independently of these, for his important calling in war. This indeed is the duty of every officer, but the rule applies in a far higher degree in the case of General Staff officers, for they are invariably called upon in war to hold positions, though perhaps only as assistants, which are far above their rank, and also generally far above what their experience would entitle them to. The General Staff officer has consequently to strive all he can to make up for this by the most diligent study. It is only thus that he can be of real use to both General and troops.

The first condition for this is a most accurate and intimate knowledge of the organisation and formations of his own Army. It is not sufficient, for instance, to know that a mobilised Army Corps is accompanied by a certain number of bearer companies and field hospitals, but it is also necessary to know their special use, and what amount of service they are actually capable of. The usual peace duties, even at autumn manœuvres, when, as is well known, these medical services are not put to the test, but are usually only nominally employed, afford no opportunity of intimately learning the object they are intended for, or their practical use. Nothing but the most intimate acquaintance with the regulations on the subject, the very nature of which is anything but attractive, can lead to the results desired.

Next, a General Staff officer must be perfectly familiar with the tactical formations of all arms. He is not indeed expected to occupy his time in learning by heart the tiresome, insignificant details of drill, but in mastering the main tactical principles which are laid down in the Regulations, and then directing his

special attention to those formations which are most generally used on the march and in battle. In this respect, he will perhaps find the best way of acquiring knowledge is by constantly being present on the drill grounds of all arms.

This work, which is so essentially necessary to the practical training of the General Staff officer, must, however, go hand in hand with the theoretical study of military science, limited, of course, to a certain extent, but including all that will be practically useful.

With a view to the useful development of various special military sciences, and permanently keeping them up to date, the General Staff, taken as a whole, cannot dispense with those officers who, gifted by nature with certain talents and tastes, can go deep into certain subjects, and thereby render most important services. But it is certainly not desirable that all General Staff officers should be distinguished by some special kind of learning which would, of necessity, limit their general utility. Thus, as the most minute mathematical investigations prove that for certain purposes the use of simple elementary formulæ suffices, and as an individual using such formulæ places the most implicit confidence in the authority of the higher mathematician, so in the case of the military sciences the results of the deep special study of others must be accepted. They can then be turned to practical use in the performance of the duties of the General Staff. In this way a man may be most accomplished without falling into the error of being superficial. A General Staff officer should know most thoroughly everything he has to do both in peace and war, but it is by no means necessary that he should be the originator and author of everything that he knows. The investigations of individuals in special subjects should be looked upon rather as the common property of all, provided they have a general and acknowledged importance, and their value has been satisfactorily proved by competent authority. But everything must work collectively to the attainment of a common result, and this is: to ascertain from the

study of the history of war, the principles of leading troops both to and during battle, arriving herein at clear and independent conclusions. It is not a means to an end, but the *end itself*, the knowledge of all that the study of military matters and military experience can teach.

In devoting his energy to these mental qualifications, the General Staff officer should, however, not neglect to keep his physical powers up to the mark. He must have frequent practice in the handling of the different arms; he must train himself to be a bold and untiring rider; he must accustom his eye to taking in at a glance a correct view of the military situation; he must write a clear hand, and be a good military draughtsman. Finally, by keeping himself constantly in contact with troops, he should never lose his fellow-feeling for them or their wants; a frequent return to regimental duty will, in this respect, refresh his knowledge, and is consequently most desirable.

CHAPTER. II.

THE GENERAL STAFF OF THE GERMAN ARMY.

It will be interesting, and at the same time give us a deeper insight into the organisation of the great European Armies, if we closely examine the special arrangements of their General Staffs. And it will be best if we first of all deal with the Prussian General Staff in a specially exhaustive way. A description of its historical development affords us at the same time a picture of the gradual growth of the original Brandenburg, and subsequently Prussian Army, and shows what duties were assigned to the General Staff at different periods, in conformity with the standard of military knowledge and the characteristics of the distinguished Generals of the day. Next, the different stages of its development, especially its position as regards the Commander-in-Chief, the higher Military Administrative Authorities, and the Army; and how this has been developed and moulded in course of time in the Prussian Army, furnish us with a scale of comparison by which we can judge the comparative state of development on these points, of the General Staffs of other great Armies at the present moment. A careful consideration of all these circumstances will perhaps result in our finding that the following points constitute the main principles on which the present efficiency of the Prussian General Staff is secured. First of all there is the independent position in the organisation of the Army which it has gradually attained; next, the fact that appointment to it is restricted to no clearly defined claims; next, again, the absolute freedom of its military scientific training, which is controlled only by the Sovereign as Commander-in-Chief; and finally

there is the compulsory return of its officers from time to time to regimental duty. Officers of the Prussian General Staff are, and will consequently continue to be, on these conditions, an unadulterated product of the Prussian Army of which they are a part, and of which they possess all the excellent qualities.

1. THE GREAT GENERAL STAFF.

We first find traces of a General Staff, *i.e.*, of certain officers permanently employed apart from regimental duty in the Brandenburg Army, under the rule of the Great Elector.

It is to be assumed that this arrangement, like many other improvements introduced at that time in the Brandenburg Army, was copied from the Swedish organisation, which was then looked upon as a pattern.*

The first Brandenburg Quartermaster-General was Lieutenant-Colonel Gerhard v. Bellicum, in the year 1655, to whom was immediately added Jacob Holsten, a Colonel of Cavalry.

The appointment of these two officers took place on the Brandenburg Army taking the field at the time of the war between Sweden and Poland, in which the Great Elector found himself involved against his wish. Gerhard v. Bellicum was attached to Lieutenant-General Graf zu Waldeck, commanding the Cavalry, and Jacob Holsten was appointed Quartermaster-General of the Army which was with His Serene Highness, and under the command of the Master-General of the Ordnance, Freiherr v. Sparr. The Quartermaster-General was, however, at that time only a member of the "General Staff," which comprised, in the military language of that time, all general officers and the higher functionaries.

We find the following persons on the pay list of the General Staff of an Army on the 1st July, 1657 :—

	£	s.	d.
1 Master of the Ordnance (General commanding), with			
monthly pay and allowances of	105	10	0

* The statement of the Belgian Captain Baron Lahure (compare his work on the General Staff, see pages 68 and 77) that the Prussian General Staff was formed under Frederick II, and was based on the French pattern, is incorrect.

	£	s.	d.
1 General Commissary (Lieutenant-General filling the post of Chief of the Staff and Commissary-General) ..	50	8	0
1 General <i>Wachtmeister</i> (Major-General, as Assistant to the Commissary-General, with special charge of conducting the order of march and of camping arrangements and fighting formations on days of battle) ..	50	8	0
2 Adjutant-Generals	25	4	0
	and 16	16	0
1 General <i>Auditeur</i> (Judge Advocate)	16	16	0
2 Quartermaster-Generals (for engineering, entrenching, and constructing camps, and in peace time taking charge of castles and fortresses) .. .. .each	16	16	0
1 General Supply Master	8	8	0
1 Staff Quartermaster (who quartered the troops) ..	4	19	0
1 Field Paymaster	4	4	0
1 Field Chaplain	4	4	0
1 Field Apothecary	4	4	0
1 Field Surgeon	3	7	6
1 General Wagon Master	8	11	0
1 Provost Marshal, who had attached to him a provost and two executioners	8	11	0
11 Additional Office Assistants and Employés.			

A list of the General Staff in the years from 1670 to 1673 shows the following, with the pay attached :—

	£	s.	d.
General Field-Marshal Sparr	120	0	0
Prince v. Anhalt	75	0	0
Master General of the Ordnance Dürfling (on half-pay) ..	37	10	0
General of Infantry* Graf zu Dohna	75	0	0
Lieutenant-General Wannenbergl	60	0	0
„ „ Goltz	60	0	0
„ „ Duke of Holstein	60	0	0
Commissary-General	45	0	0
Major-General Sparr	45	0	0
„ Quast	45	0	0
„ Pfuel	45	0	0
„ Eller	45	0	0
„ Pöllnitz	45	0	0
Quartermaster-General Chieze	15	0	0
Adjutant-General of the Elector	15	0	0
„ of Infantry	12	0	0
„ of Cavalry	12	0	0
General Supply Master	15	0	0
General <i>Auditeur</i> (Judge Advocate)	12	0	0

* In the German Army "General of Infantry" or "General of Cavalry" corresponds to the English (full) General.—(Tr.)

				£	s.	d.
Lieutenant-Quartermaster-General	..	..	..	7	10	0
2 Engineer Officers	..	..	..	..	each	7 10 0
1 Captain of Guides	..	..	..	..	..	4 10 0
23 additional Employés with a total of	..	..	..	74	11	0

The high rate of pay in peace time of the General officers is remarkable in the above, for, notwithstanding the depreciation in value that money has since undergone, such high rates of pay have never been since attained. Quartermaster-General Chieze had charge of the Brandenburg fortresses, laid out the Müllroser Canal, built the palace at Potsdam and the mint in Berlin, and invented carriages slung by straps, called *Berlinen*. He was consequently a most useful man in more ways than one. The General War Commissariat (General Staff and Administrative Departments, according to modern ideas) was specially formed for each campaign. The Quartermaster-General and his assistants alone had a permanent peace employment, and this was of a military engineering nature.

This proves, beyond doubt, that the historical growth of the Brandenburg-Prussian Quartermaster-General's Staff can only have commenced with the very limited sphere of General Staff duties just mentioned. Moreover, it is evident that a close connection between the General Staff and the Corps of Engineers existed for considerably over a century, that is to say, until the year 1806, when Lieutenant-General v. Geusan, the Chief of the Corps of Engineers, held the post of Chief of the Quartermaster-General's Staff as well.

A fixed establishment of ranks was gradually introduced in the Quartermaster-General's Staff by the successors of the Great Elector. These were "Quartermaster-General," "Lieutenant-Quartermaster-General," "Chief Quartermaster," "General Staff Quartermaster" and "Staff Quartermaster." These appointments were not, however, necessarily to be held by officers of any fixed Army rank.

Frederick II had but very few officers of the Quartermaster-General's Staff. The Great King was not only his own Chief of the General Staff, but performed at the same time many duties

of General Staff officers of lower rank. All plans for military operations and all orders and instructions to subordinate commanders, were either written or dictated by the King himself. If he required assistance, he had his Adjutants,* some Engineer officers, and the mounted *Feldjäger*. The Quartermaster-General's Staff existed hardly even in name.

The (written) Army List for the year 1741 shows the following officers as belonging to the General Staff :—

1. Colonels and Adjutant-Generals.
 - 2 Cavalry.
 - 5 Infantry.
2. Colonels and Brigade Majors.
 - 1 Infantry.
3. Majors and Wing Adjutants (*Flügel Adjutanten*).
 - 1 Cavalry.
 - 4 Infantry.
4. Quartermaster-General du Moulin from 1728.
 Lieutenant-Quartermaster-Generals.
 Colonel de Hautcharmoy from 1730.
 Major de Seers }
 „ v. Wrede } from 17th May, 1741.
5. Colonels and Lieutenant-Colonels belonging to the Army.
 9 Officers.

But in the year 1742 Majors de Seers and v. Wrede were transferred to the Regiment of Pioneers, without other officers being appointed to fill their places on the Quartermaster-General's Staff. It was not until the year 1750 that the latter again consisted of three officers ; in the year 1756 it consisted of six, which number, however, was, after many changes, reduced during the Seven Years' War to two.

The King's "Instructions" for his Quartermaster-General are dated from the summer of the year 1757, but these, however, only contained the principles of planning fortresses, and the laying out, attack and defence of fortified camps. On the latter art, which he called *Castramétrie*, the King laid great stress. In

* Adjutants signifies Aides-de-Camp in this case. The German term *Adjutantur* signifies the Routine Staff as distinct from the General Staff, and their duties more nearly correspond to those of the Staff in the English Army.—(Tr.)

the year 1758, he dictated at the camp at Breslau instructions dealing with this subject to his Field Engineers. The latter were specially employed by him in surveying ground, in reconnoitring the enemy's camps and positions, and in finding and establishing roads for the movements of troops (*Kolonnenwege*).

New appointments in this branch, however, were created during the Seven Years' War in the Captains of Guides and Brigade Majors. The former were commanders of the mounted *Feldjäger*, on whom devolved the duty of leading columns on the march, as no maps then existed. Brigade Majors with troops in the field corresponded to Town Majors in barracks. They gave the parole, regulated the guard duties in camp, and kept the duty rosters and reports.

All these officers employed away from regimental duty, kept the rank and uniform of their corps or regiments, with the single exception of those who were appointed Wing Adjutants. It was not until after the peace of Hubertsburg that the Quartermaster-General's Staff was increased by the appointment of six Lieutenants, who were taken from the establishment of their corps or regiments, but, nevertheless, continued to wear their respective uniforms. We find the King increasing this number, as early as the year 1764, to twelve. This decidedly shows that a want in this respect had made itself felt during the war, which could not be remedied until the peace which followed.

We find in the Army List of 1767—

- 1 Quartermaster-General.
- 1 Quartermaster.
- 15 Lieutenant-Quartermasters.

The latter, however, were ordered by the King to do duty from time to time with the regiment of Guards at Potsdam, so that they might not get estranged from regimental duty.

He took, at the same time, great interest in the scientific training of these officers, and was careful to supply the Quartermaster-General's Staff with highly-trained and talented men, and

to reward those who distinguished themselves. Colonel v. Massenbach, whose name is subsequently associated with a painful period of our history, but who rendered good service in the organisation of the General Staff, was transferred from the Württemberg service, after passing a special examination in 1783, and appointed Junior Quartermaster-Lieutenant. Von Rüchel, who afterwards became a Lieutenant-General, and who, as a young officer, enjoyed an excellent reputation in his profession, was appointed to the Quartermaster-General's Staff as early as 1782, and was honoured with the special favour of the King, who personally instructed him in scientific military matters. A certain Lieutenant v. Zastrow received as a reward for a beautifully drawn plan the decoration "*pour le mérite*," which was at that time the only decoration besides that of the "Black Eagle."

In the year 1785 we still find all officers, not actually belonging to, or doing duty with, troops, borne on the strength of the General Staff, whilst the Quartermaster-General's Staff consisted of 10 officers only. It was not until the time of Frederick William II that both had one and the same meaning. The Quartermaster-General's Staff then received a special uniform (light blue or white coat, with red collar and facings, silver lace, and white buttons), and became a distinct corps. The first printed Army List shows the following in the year 1789 :—

Personal Staff of the King.

1. 2 Adjutant-Generals.
2. 4 *Flügel* Adjutants.
3. General Staff, consisting of 2 Colonels, 1 Lieutenant-Colonel, 6 Majors, 4 Captains and 1 Lieutenant. (All these officers had a place at the Marshal's table at Potsdam.)
4. 10 officers belonging to the Army.

There were 19 officers of the General Staff in 1791, 24 in 1793, 20 in 1794, and 15 in 1796, besides 15 Engineer officers as surveyors, of whom the senior was Reimann, the originator of the celebrated map which bears his name, and the junior Krauseneck, who afterwards became Chief of the General Staff

of the Prussian Army. The Quartermaster-General's Staff has been entrusted with the survey of the country from the year 1796. The work was first carried on without the plane table (this instrument was not introduced till the year 1821), but with reflecting instruments and very careful sketching. The officers carried on the actual surveying of the ground, whilst the mapping was done by Engineer surveyors. The latter were partially selected from the *Feldjäger*, as this kind of employment was expected to prepare them for their duties in war time, as guides to columns on the march. With this object, Colonel v. Massenbach worked out a special set of Instructions in the year 1801 for the *Feldjäger*, and in these he laid great stress on the importance of reconnoitring and reporting on ground, leading columns, quartering troops, and field engineering. General v. Lecoq, who belonged to the Quartermaster-General's Staff from 1787 to 1801, issued a set of Instructions in 1800 concerning the duties of the officers of the Quartermaster-General's Staff. These had special reference to the following points :—

1. Laying out camps for the Army, in which it was particularly pointed out that the necessary supply of water should be close at hand.
2. The reconnaissance of roads.
3. Guiding columns on the march.
4. Conducting troops into camp.
5. The reconnaissance of positions.
6. Organising and covering foraging expeditions.
7. Reconnoitring the enemy's positions—a duty pointed out as being of extreme importance.
8. Adjutants' (aides-de-camp) duties with the General commanding during an engagement, in which officers of the Quartermaster-General's Staff could also make themselves useful by giving their advice, *if they were required to do so*.
9. Leading columns or detachments into action.
10. Engineers' duties during sieges, if Engineer officers were wanting.
11. Laying out entrenchments in the field under a similar supposition.

12. Information and spies.
13. Keeping a journal of operations.

Colonel v. Massenbach, however, who at that time held the post of Quartermaster-Lieutenant, was as little satisfied with these Instructions as with the organisation and practical efficiency of the General Staff, and he undertook the task of instituting reforms in all these branches.

The office of the Quartermaster-General was then at Potsdam. Lieutenant-General v. Geusau, who held the post of Chief, was worn out with age, and overworked by his other duties in Berlin. This arose from his holding at the same time the posts of Chief of the Corps of Engineers, Director of the Engineer Department in the War Ministry, Inspector of Fortresses, and Custodian of the Army Medical School in Berlin. The direction of affairs in Potsdam consequently fell into the hands of the Lieutenant-Quartermaster-Generals, who acted independently, with no controlling head. These were at that time Colonels v. Phall and v. Massenbach. They were both clever men, but, as was afterwards seen, they failed to distinguish themselves or even to carry out what was absolutely necessary in actual war.

The officers of the Quartermaster-General's Staff were employed in summer in travelling, surveying and reconnoitring ground. In winter the materials collected in summer were put together and worked out, and the junior officers were at the same time instructed by the senior. But in all this there was a want of systematic arrangement, so that neither did the officers benefit by a sufficiently good and general training, nor indeed were the materials obtained worked out in a lucid or comprehensive manner.

This state of affairs, the imperfections of which did not escape the keen observation and business-like mind of Colonel v. Massenbach, induced the latter to formulate a clearly defined organisation of duties for the Quartermaster-General's Staff, based on scientific principles, and requiring very great and serious exertions on the part of the individual officers belonging to it (an idea which at that time was extremely unpopular).

But as a whole, Colonel v. Massenbach's Instructions are by no means perfect, and are based, in spite of their wide range, on one-sided military ideas.

In these are also to be found his classified description of "Military Positions," in which there is a want of clear and intelligent perception of real war and the value of the practical handling of troops. His collection of "Plans of Operations" was moreover unpractical. These plans were not merely prepared as an exercise, but Colonel v. Massenbach seemed to expect that the examples they contained were to be of great value for all time, and were consequently fitted to solve the difficulties of less gifted individuals in the future. He attempted, moreover, by establishing what he was pleased to call "Fundamental Treatises," in which the changes that constantly occur in practically carrying out the art of war, had, naturally, to be left out of consideration, to lay down rigidly-fixed and indisputable maxims which, once in possession of the Prussian Quartermaster-General's Staff as its precious property, were invariably to prevent it from making mistakes.

These endeavours certainly far exceeded any reasonable aim. Of all that was worked out with these ideas, there was little which resulted in being of any value for purely practical purposes, though this was invariably what Colonel v. Massenbach really intended. Nevertheless, we must allow that the mental work which he induced individual officers to devote themselves to, proved afterwards to be of great value to themselves and their subsequent careers. The organisation which he proposed, and in the main carried out, survived even the catastrophes of 1806 and 1807, and its distinctive features have been adhered to to the present day.

The first memoir addressed to the King by Colonel v. Massenbach is dated January, 1802. This memoir was on the question of regulating, according to fixed principles, the work of the General Staff in peace, hitherto carried on without any system; and gives the ideas of the author himself on the subject, though not arranged with much system or method.

The first part dealt with the "Order and rules by which we are to draw up a general plan of any military undertaking," and gave as examples a number of political complications and cases of war in which Prussia might possibly find herself involved. It is characteristic of Colonel v. Massenbach, who was one of the greatest admirers of Napoleon, that he never proposed a single case to be worked out which concerned a war between France and Prussia.

In the second part, he shows the necessity of reports on tours. He also proposed to divide the country into three theatres of war, and the General Staff into three Brigades corresponding to them. For the topographical survey of the most important parts of the country he proposed the use of the scale of 1 : 20,000, and a larger one of 1 : 10,000, for the ground in the immediate neighbourhood of fortresses. He went, indeed, so far as proposing models of the Silesian mountains.

Colonel v. Massenbach next condemned the principle of scattering General Staff officers in the provinces. In this he was certainly right, for at that time the peace organisation of the Army had no commands to which General Staff officers could have been permanently attached with advantage. On the other hand, he proposed that almost half of these officers should revert, after a certain time, from the General Staff to regimental duty, in order to supply the Army with a school of trained officers for Generals.

After this followed directions to General Staff officers with regard to maintaining the secrecy of official documents, keeping themselves acquainted with all tactical and administrative changes in the Army, and as to the duties they would have to perform at peace manœuvres. Finally, Colonel v. Massenbach expressed a wish that the King should call upon the Quartermaster-General (Chief of the General Staff) to furnish him directly with a verbal report on the proposed plans of operations for war, when fully worked out, as the Adjutant-General, who would otherwise be called upon to do this, would not, he maintained, have sufficient time with his other duties to study

thoroughly all General Staff projects, and furnish the King with exhaustive reports on them.

Frederick William III received the memoir very favourably, and referred it, after expressing his approval in general terms, to certain distinguished Generals for their opinion, viz., the Duke of Brunswick, Prince Hohenlohe, Field-Marshal v. Möllendorff, Lieutenant-General v. Geusau (Quartermaster-General), and Major-General v. Zastrow (Adjutant-General).

All were highly pleased with its merits as a whole. Serious objections were raised only by General v. Zastrow, who in fact appeared to have been made somewhat uneasy by the claims urged for the position of the Quartermaster-General in his relations with the King, although in the opinion which he submitted he refrained from expressing a judgment on this point which concerned himself personally.

Meanwhile, however, Colonel v. Massenbach, who did not remain ignorant of the opinions, good or otherwise, that had been expressed on his project, prepared a second and better compiled memoir, slightly modified from the first, dated 19th November, 1802, which he prayed the King to submit to the judgment of Generals v. Rüchel and v. Tempelhoff. These agreed in the main with Massenbach, but General v. Tempelhoff found a good deal to object to in the details. They were of the same mind in opposing the aims of the memoir as regards the preliminary working out of plans of operations. The latter they would allow to be of value as exercises only; but whilst General v. Rüchel urged "that there are many more political combinations than are given as examples," General v. Tempelhoff declared that it was "very injudicious and hurtful to endeavour to extract from such dissertations an epitome to serve as directions to the General in command." "No General," he added, "would be satisfied at receiving such directions, and the less so the more he was confident in his own ability."

The King then referred the second memoir, together with all the opinions expressed on it, in March, 1803, to Lieutenant-General v. Geusau, with an order to prepare a project for the

new organisation of the General Staff according to it. This was entrusted to Colonel v. Massenbach, who fulfilled the task by rapidly making a project in a third and fourth memoir, the result being the issue of "Instructions approved of by the King, dated the 25th November, 1803, for the Quartermaster-General's Staff."

The Quartermaster-General's Staff was now to consist of—

1 Quartermaster-General.	6 Assistants.
3 Lieutenant-Quartermaster-Generals.	6 Officers as surveyors (<i>officiers</i>
6 Quartermasters.	<i>géographes</i>).
6 Lieutenant-Quartermasters.	6 <i>Kolonnenführer</i> .

To these were attached—

- 1 Inspector of plans, &c.
- 2 Registrars of plans, &c.
- 2 Engravers on copper.
- 2 Office servants.

An examination in surveying, fortification, tactics, and military art and history was made compulsory for the appointment of young officers to the General Staff. Further conditions were also imposed, viz., as regards integrity, reliability and thorough knowledge of regimental duty. The General Staff was divided into three equally strong Brigades, which were respectively charged with working out the eastern, southern and western theatres of war, together with the countries lying adjacent.

The duties of the General Staff were divided into permanent and current work.

The former consisted in developing the principles upon which military operations are carried out. Only what had been confirmed by the Special Committee, consisting of the Quartermaster-General and the three Lieutenant-Quartermaster-Generals, was to be received and submitted for Royal Assent.

The current work embraced all military subjects, including the study of current literature, as well as the most careful working out of all military problems, in which there was any possibility of the State becoming involved.

Officers of the Quartermaster-General's Staff were, moreover,

expected to make themselves familiar with all military positions in any way remarkable in Prussian territory, both from a defensive as well as an offensive point of view, that is to say, whether they could be used by the Prussian Army only or by the enemy as well, and this not in a general way, but in the most minute detail.

The tours necessary for the above were to be used for collecting statistical information of every kind, which was to be kept up to date by constant reference, as regards changes, to the civil authorities. A triangulation was to form the basis of the survey, which however, was to be restricted to only what was most necessary. At the same time, maps, as well as all other work of the General Staff, were to be kept perfectly secret.

55,769 thalers* were assigned to the Quartermaster-General's Staff for personal and other expenses, of which 10,800 thalers alone were for travelling expenses during the six summer months. Colonel v. Massenbach also succeeded in getting 18 attached officers added to the establishment, instead of the 6 attached officers, 6 officers as surveyors and 6 *Kolonnenjäger*, as well as the Royal Sanction, dated 11th February, 1804, to some of his "Explanations" of the Instructions previously mentioned. By this he succeeded in getting some of his pet ideas made to hold good as supplementary. We thus find among the twelve "Fundamental Treatises" to be worked out by the General Staff, a treatise (No. 7) on the "Way in which fortresses should be considered as playing a part in the *Ordre de Bataille* of Armies." From remarks on routine work it is gathered that Massenbach thought of providing the country with several large central fortresses and scattering broadcast an enormous number of smaller ones. The actual existence or non-existence of these naturally caused on his part certain modifications in working out the problems of the different cases of war.

Thirty-nine officers had originally intimated their intention of competing at the first examination, held on the 15th February,

*£8,365. The *thaler* is taken as 3s.

1804. This number was subsequently reduced, by voluntary retirement, to 29, of whom 22 passed, *i.e.*, were appointed to the 22 new posts created in the Quartermaster-General's Staff (4 Lieutenant-Quartermasters and 18 attached officers). As a whole, the result of the examination was not satisfactory. A few of the candidates were taken with the intention of keeping them only for a short time on the General Staff, leaving, when the establishment of attached officers was reduced, as early as the year 1805, from 18 to 15.

The year 1806 found the General Staff complete. It was distributed to the different Armies, but failed to save them from disaster. But it numbered in its ranks many men such as Scharnhorst, Knesebeck, Müffling, Valentini, Rühle and Boyen, who, later on, greatly distinguished themselves.

The important services thus rendered to the General Staff by Colonel v. Massenbach, whose military career came to such an untimely end at Prenzlau, must be regarded as marking a distinct stride in the gradual growth of the present General Staff; its weak points have been long ago remedied. The first step towards improvement, after the disastrous war, was taken by Colonel v. Scharnhorst. A memoir of his, written in the beginning of the year 1808, starts with the war organisation of the Prussian Army in three Army Corps, and fixes the number of General Staff officers necessary for war, in accordance with this, at—

- 1 Quartermaster-General (Major-General).
- 1 Lieutenant-Quartermaster-General (Colonel).
- 4 Quartermasters (Majors).
- 8 Lieutenant-Quartermasters (Captains).
- 12 Attached officers (Lieutenants).

—
Total, 26 Officers.

The duties of these officers in war were to be regulated by a set of Special Instructions approved of by the King. These were not to be taken as a guide by General Staff officers only. They were to be communicated to the Generals of the Army as well,

“so that every officer of the former, on the one hand, should know exactly what he had to do and what was expected of him, and, on the other, that the latter should be cognizant of the duties of a General Staff Officer, so that misunderstandings, overlapping, wrong expectations, or accusations might be avoided.”

The practical training of General Staff officers was to be kept up in peace time by ensuring an accurate knowledge of the condition and the tactical manœuvres of troops, a general knowledge of the country, by exercises in the movements of troops in the field, and finally, by being employed in surveying. The summer tours were to be reduced to three months (partly for the sake of economy), and were not to be restricted to Prussia alone, but were to comprise foreign countries as well, “in so far as they might possibly form a theatre of operations for a Prussian Army at any future time.”

Knowledge in detail of certain tracts of country was to be connected with military history and thus afford opportunities for closely studying the effect which ground has on the handling of troops. Finally, the younger General Staff officers were to be practised in the autumn of every year, after the manœuvres, in reconnaissance of ground, choosing roads for troops, places for bivouacing, and in similar duties.

Whilst the greater portion of the General Staff was to be stationed, as before, in Berlin and Potsdam, some officers were to be permanently attached in the provinces to the Generals they would be told off to in war, with the double object of establishing mutual confidence and bringing them closer in contact with the troops.

The establishment fixed on the principles of this scheme required 36,000 thalers (£5,400) for the General Staff, of which 9,100 thalers were for tours, &c. This, in proportion to the general reduction at that time of military expenditure, does not show a very great reduction from the former sum of 61,000 thalers.

The Army List of the year 1808 shows—

- 1 Lieutenant-Quartermaster-General (Major-General v. Scharnhorst).
- 2 Quartermasters.

- 6 Lieutenant-Quartermasters.
- 10 Attached officers.
- 15 Extra officers, giving a total of 34 officers.

After the Army had been divided into 3 "Governments" and 6 Brigades (forming the cadres of 3 Army Corps and 6 Divisions on a war footing), from the year 1809 one General Staff officer was attached permanently to each Brigade, and one or two to each Government.

The Prussian General Staff again appears in a distinct form in the campaign of 1812 against Russia. There were 20 General Staff officers of all ranks, besides 9 Adjutants, in the Prussian Auxiliary Corps of 21,000 men, viz. :—

With the General Commanding-in-Chief (Lieutenant-General v. Grawert)—

- 1 Chief of the General Staff.
- 1 Quartermaster.
- 4 Lieutenants of the General Staff.

With the Second in Command (Lieutenant-General v. Yorck)—

- | | |
|----------------------|----------------------------------|
| 1 Major | } of the General Staff. |
| 1 Captain | |
| 1 Lieutenant | |
| 1 Major | } attached to the General Staff. |
| 1 Captain of Cavalry | |

With the Commander of the Infantry—

- | | |
|--|-------------------------|
| 2 Majors | } of the General Staff. |
| 1 Lieutenant | |
| 2 Lieutenants attached to the General Staff. | |

With the Commander of the Cavalry—

- 1 Quartermaster.
- 2 Lieutenants of the General Staff.
- 1 Lieutenant attached to the General Staff.

This strong contingent of General Staff officers was caused, in the first place, by the fact that the position of Commander-in-Chief was held by two officers. On the other hand, we can

see that it was intended to give to a large number of General Staff officers the opportunity of actually practising what they had learnt in the last four years of peace.

The war of 1813-14 brought, with the unexpected appearance of an Army which had been quietly formed in peace, a corresponding increase in the General Staff. Besides being employed at the headquarters of Armies, the officers belonging to it were attached to Army Corps and Brigades. From one to two General Staff officers were attached to each of the latter formations, which, being composed of all arms, corresponded to Divisions of the present day. There was this difference, however, from former custom, viz., they were attached to the Brigade itself and not to the person of its Commander, and consequently were not affected by a change of Brigadiers.

We shall not be wrong in assuming that the officers belonging to the General Staff took their full share in the great events of those years. The work done by the Headquarters Staff of the Silesian Army may be taken as an example of efficiency even at the present day.

When the war came to a close, *i.e.*, after the second Peace of Paris, the General Staff was consolidated, so that one portion was kept together in Berlin under its own special Chief as the "Great General Staff," and the other distributed as "Army General Staff" among Army Corps and Divisional commands, and consequently kept very closely connected with the troops. The whole of the General Staff was then under the Second Department of the War Ministry, and from this position it was not released until 1821, in which year the King, on the 25th January, appointed General v. Müffling sole Chief of the General Staff of the Army.* By this decree the General Staff obtained

* Lieutenant-General Freiherr v. Müffling (called Weiss) held the post of Chief of the General Staff of the Army from the 25th January, 1821, to the 28th November, 1829. He reorganised the general survey of the country, which had been neglected to the very verge of ruin, including both the triangulation and the topographical survey. A system of hill shading, in use up to the present day, is still called after his name; and, under his direction, Staff tours for General Staff officers were introduced.

Lieutenant-General v. Krauseneck was Chief of the General Staff of the Army

an independent position directly under the Emperor, which it has retained to the present day.

We may regard this circumstance as one of the most important causes of the splendid achievements of the General Staff in recent campaigns. The fact that the Prussian General Staff is quite different from the General Staffs of most other great Armies as regards this particular question, certainly justifies a very close examination of the considerations which bear on this point.

The result of this must surely convince us that even if the Prussian General Staff had not already enjoyed the advantage of being directly under the Emperor for more than 80 years, other causes, arising partly from progressive changes in the form of government, partly from developments in military organisation, and partly from innovations in military matters generally, would certainly have secured for it the position it now holds.

The position held by the Chief of the General Staff is, in fact, a matter of the greatest importance.

It cannot be denied that it is essential for war purposes that the same man who is charged with the necessary preparations in peace should be entrusted with the conduct of the operations in

from the 28th November, 1829, to the 9th May, 1848. It will be shown further on, in the chapter on autumn manoeuvres, what excellent services he rendered in this most important subject. After him the post was filled by Lieutenant General v. Reyer from the 13th May, 1848, during whose tenure of office tours for practising the duties of the General Staff with the different Army Corps were established. The great experience which General v. Reyer had gained as a General Staff officer of the advanced guard of the Army of Silesia, in the campaign of 1813-14, was turned to account by him in a most practical and instructive way. He died on the 7th October, 1857.

General Field-Marshal Graf v. Moltke was Chief of the General Staff of the Army from the 29th October, 1857, till the 10th August, 1888. We shall show further on in this work the immense strides the Prussian General Staff made during this period. The campaigns of 1864, 1866 and 1870-71 bear witness to this of themselves and make other allusions appear superfluous.

General Field-Marshal Graf v. Moltke, who was appointed President of the Defence Committee, was succeeded on the 10th August, 1888, by General Graf v. Waldersee, who afterwards became Field-Marshal. This officer was General Officer Commanding Ninth Army Corps from the 2nd February, 1891, and subsequently Army Inspector; he also went out in command of the Allied Forces in China; he died in 1904.

General Graf v. Schlieffen has been Chief of the General Staff of the Army since the 7th February, 1891.

war. This is evidently absolutely necessary owing to the rapidity with which well-organised Armies can be changed from a peace to a war footing and strategically concentrated on the frontier by railway. If the arrangements for the latter operation, which really forms a commencement of the campaign, were left till the last moment, precious time would be lost and fatal delays caused. It is just as absurd, on principle, that it should be expected that any man, called upon at the last moment, could undertake the direction of warlike operations, after a fixed direction had been given them by a strategical concentration by railway, which had been prepared beforehand in peace by another man and had already been set in motion.

Consequently, there cannot be the slightest doubt that the Chief of the General Staff of the Army, both in peace and war, should be one and the same man.

In countries where the Chief of the General Staff is under the Minister of War, it is possibly taken for granted that the latter, without whose knowledge and authority the preparatory business cannot be carried out, would himself take over the whole of the duties of Chief of the General Staff of the Army at the most critical moment. This is, however, a terrible mistake. In the first place, it would be next to impossible that a man would be found who possessed at the same time the necessary qualifications of a War Minister and of a Chief of the General Staff, that is to say, was equally master of the art of military administration and of handling Armies. Besides, the choice of a War Minister in many countries is often restricted by political considerations, such as his parliamentary connections.

And even if such an exceptional man as this could be found, he could not possibly fill both appointments referred to in war time. It would be impossible even for the most talented man. Consequently, one of these most important and responsible posts would have to be placed in other hands at a critical moment. Again, should the War Minister be unable, on war breaking out, to carry on the duties of Chief of the General Staff, which, perhaps, he might have done during peace, then

certainly no one who had served under him during this time would be found able to do so, for he would neither possess the requisite authority nor be trusted to the extent necessary. In fact, the man who had not been supposed capable of carrying on the duties of such an important post in peace, could certainly not be given far greater responsibilities in war.

The Chief of the General Staff of the Army must hold, in peace, a separate and independent position. Like Generals holding commands, he must be directly under the Emperor. He will then know best how to train his officers so as to render good service in war. It is thus evident that the step taken in Prussia in 1821 was a right one.

The General Staff was soon reduced again on economical grounds. Notably, the General Staff officers hitherto attached to Divisions were abolished during peace time.

The following was the establishment of the General Staff, fixed according to Royal Order, dated 11th January, 1824 :—

1 Lieutenant-General as Chief.
13 Colonels (9 Chiefs of the General Staff with Army Corps, 3 Chiefs in the Great General Staff, and 1 Chief of the General Staff attached to the Inspector-General of Artillery).
13 Field Officers (9 on the staffs of Army Corps and 4 on the Great General Staff).
10 Captains (9 on the staffs of Army Corps).
9 Lieutenants (on the Great General Staff).
—
Total, 46 Officers.

The war formation at that time required the following :—

3 Army commands : 3 General Officers, 6 Field Officers, 6 Captains, 6 Lieutenants.
9 Army Corps : 9 General Officers or Colonels, 9 Field Officers, 9 Captains.
36 Divisions 36 ..
9 Cavalry Divisions 9 ..
Commander-in-Chief's headquarters, 2 General Officers, 4 Field Officers, 2 Captains.
Total 101 Officers.

Thus the peace establishment was considerably less than one-half of what was required for war—a state of affairs which was exceedingly dangerous. This was the more so, as at that time General Staff officers were not often changed, and consequently there was no sufficient reserve of regimental officers who had served on the General Staff and could be reckoned on in case of emergency.

The events of the years 1848 to 1850 disclosed many imperfections, chiefly caused by certain economies which had been carried to excess in preceding years. This led to a fresh work of re-organisation, the final result of which forms the foundation of the German Army as it exists at the present moment.

Attention was soon turned to the General Staff. It was given a new establishment as early as the 7th April, 1853, by which General Staff officers were again attached to Divisions in peace. The increase in the peace footing thus obtained was met by a corresponding decrease in the war footing of the Army in another way (2 Infantry Divisions, of 12 battalions each, forming an Army Corps, instead of 4 Divisions of 6 battalions each). This was a more favourable proportion between the peace and war establishments at the time.

The peace establishment was as follows :—

- | | |
|--|----------------|
| 1 Lieutenant-General as Chief | } as hitherto. |
| 13 Colonels | |
| 32 Field Officers (9 on the staffs of Army Corps, 18 on those of Divisions, and 5 on the Great General Staff). | |
| 18 Captains (9 on the staffs of Army Corps and 9 on the Great General Staff). | |

—
Total, 64 Officers.

The war establishment was reckoned at 83 officers (18 officers less than hitherto), so that the peace footing was only 19 officers short, *i.e.*, about a fourth. The supply for this deficiency could be counted on, after the necessity of the periodical return of General Staff officers to regimental duty was again recognised. The mobilisation which took place in the summer of the year

1859 showed no difficulty in increasing the number of General Staff officers.

But, on the other hand, difficulties arose in the campaign of 1864 which could only be remedied by raising the peace establishment. No systematic mobilisation of whole Army Corps took place in this campaign, but only that of certain separate Divisions. Whereas, however, the General Staffs of Army Corps remained behind at their posts occupied with their peace duties, the Divisions were re-formed into Army Corps at the seat of war. The extra number of General Staff officers required in consequence of this was met by detaching officers from the Great General Staff. But the latter was then barely able to carry on its own duties. An increase of the General Staff was therefore determined on, together with the strict separation of a special establishment of the General Staff for purely scientific purposes, to ensure the continuity of which, certain specially fitted officers were to be retained and exempted from the usual spells of regimental duty.

The establishment fixed by Royal Order of the 5th August, 1865, and which had reference to these requirements, was, however, never actually carried into effect. Want of funds at the time, as well as the differences which arose between the Government and a certain party of the representatives of the country on the question of regulating the administration of the public finances, prevented the increase in the establishment actually taking place till the spring of the year 1866.

The events of this year brought the proposed increase again to the front, and led to the establishment on which our present organisation is based, being fixed by Royal Order of the 31st January, 1867. The considerable augmentation of the General Staff on this occasion arose not only from the increase of the Prussian Army by three Army Corps, but more especially from the necessity which had been felt during the campaign of 1866 of leaving a sufficient number of supernumerary or extra General Staff officers behind to take permanent charge of the military organisation of the railway traffic, and to be ready for

any new contingencies that might arise in the course of the campaign, when the whole army was mobilized.

In spite of the reduction in numbers at headquarters of Armies, and the fact that four staffs were not appointed (those of the III and IV Army Corps were not formed at all, and the VII and VIII Army Corps formed the nucleus of the Staff of the Commander of the Elbe and Maine Armies), and several Cavalry Divisions were not formed, still 105 General Staff officers were gradually employed in one way or another exclusive of Railway Staff officers. Thus, the assumed war establishment of 83 officers was very considerably exceeded, for the peace footing of 64 officers had to be increased by 41, *i.e.*, about two-fifths of the whole number actually required.

The following was the establishment fixed by Royal Order of the 31st January, 1867 :—

“*Haupt-Etat.*” (Main Establishment.)

- 1 Chief of the General Staff of the Army.
- 3 Chiefs of Sections of the Great General Staff.
- 12 Chiefs of the General Staff of Army Corps.
- 1 Chief of the General Staff with the General Inspection of the Artillery.
- 7 Field Officers in the Great General Staff.
- 12 Field Officers on the staffs of Army Corps.
- 25 Field Officers on the staffs of Divisions (including 1 for the Cavalry Division of the Guard).
- 15 Captains on the Great General Staff.
- 12 Captains on the staffs of Army Corps.

—
Total, 88 Officers.

“*Neben-Etat.*” (Subsidiary Establishment) (for scientific purposes).

- 4 Chiefs of Sections
 - 5 Field Officers
 - 12 Captains
- } belonging to the Great General Staff.

—
Total, 21 Officers.

A grand total of 109 officers, of which 46 officers, *i.e.*, 42·2 per cent., belonged to the Great General Staff, whilst the old establishment of 64 officers showed only 17, *i.e.*, only 26·6 per cent. as belonging to it.

The analogous formation for the Kingdom of Saxony and the Grand Duchy of Hesse, adding to the above eight and two officers respectively, brought the peace footing for the Army of the North German Confederation up to 119 officers. This was the state of affairs on the declaration of war in 1870-71, which made great demands on the available number of officers. The original organisation of the Army on taking the field was as follows:—

1. Headquarters of the Commander-in-Chief of the Forces in the Field (His Majesty the King)—

- 1 Chief of the General Staff of the Army.
- 1 Quartermaster-General.
- 3 Chiefs of Sections.
- 3 Field Officers (including 1 of the Royal Saxon Army).*
- 6 Captains, &c.

—
Total, 14 Officers.

To which should be added, from the fact of their being so closely connected during the whole of the campaign with the General Staff—

- 1 Intendant-General of the Army.
- 1 Chief of Military Telegraphs.

2. Command of the I Army—

- 1 Chief of the General Staff.
- 1 Chief Quartermaster.
- 1 Field Officer.
- 2 Captains.
- 1 First Lieutenant.

—
Total, 6 Officers.

3. Command of the II Army—

- 1 Chief of the General Staff
- 1 Chief Quartermaster.
- 2 Field Officers.
- 2 Captains.
- 2 First Lieutenants.

—
Total, 8 Officers.

* The Chief of the General Staff of the Army had two Adjutants told off to

4. Command of the III Army—

- 1 Chief of the General Staff.
- 1 Chief Quartermaster.
- 1 Field Officer.
- 3 Captains.
- 2 First Lieutenants.

—
Total, 8 Officers.

To which should be added 1 Bavarian, 1 Württemberg, and 1 Baden officer.

5. Each Line of Communications of the three Armies had a Chief of the General Staff, in all three officers.

6. Military Government of the Rhine—Districts of the VII, VIII and XI Army Corps—

- 1 Chief of the General Staff.
- 1 Field Officer.
- 1 Captain.
- 1 First Lieutenant.

—
Total, 4 Officers.

7. Military Government of the Districts lying on the sea-coast—
Districts of the I, II, IX and X Army Corps—

- 1 Chief of the General Staff.
- 1 Field Officer.
- 1 Captain.
- 1 First Lieutenant.

—
Total, 4 Officers.

8. General Command of mobilised troops in the Districts of the I, II, IX and X Army Corps—

- 1 Chief of the General Staff.
- 1 Field Officer.
- 2 Captains.

—
Total, 4 Officers.

9. Military Government of Berlin—Districts of the III and IV Army Corps—

- 1 Field Officer.

10. Military Government of Posen—Districts of the V and VI Army Corps—

1 Field Officer.

11. Army Corps Commands of the Guard Corps and Army Corps, Nos. I to XI—

each, - 1 Chief of the Staff.

1 Field Officer.

2 Captains.

—
Total, 48 Officers for the 12 Army Corps.

12. 2 Infantry Divisions of the Guard, 22 Infantry Divisions, 1 Cavalry Division of the Guard, 6 Cavalry Divisions, 1 Landwehr Division of the Guard, and 3 Reserve Divisions, giving a total of 35 Divisions—

1 Field Officer or Captain each, or a total of 35 officers for the 35 Divisions.

13.

1 General Staff officer with the Württemberg Field Division.

The grand total of the above shows 138 mobilised Prussian General Staff officers in the field, to which should be added 23 extra officers acting on the Great General Staff who were stationary. For this war strength of 161 officers there was a peace footing of 109 officers only. Consequently an increase of almost one-half had to be made.

Of the other German troops, Saxony, in addition to 1 General Staff officer at the Commander-in-Chief's headquarters, had 10 General Staff officers with her Army Corps and the headquarters of the Army of the Meuse, which was formed in the early part of the campaign; Hesse had 1 officer at the headquarters of the II Army, and 2 officers with her Division; Bavaria, in addition to some officers at the headquarters of the III Army, had 24 officers with her two Army Corps (there was a General Staff officer attached to each Infantry or Cavalry Brigade); Württemberg, in addition to 1 officer at the headquarters of the III Army, had 8 General Staff officers with her Field Division (there was a

General Staff officer to each Brigade); and Baden, in addition to 1 officer at the headquarters of the III Army, had 4 General Staff officers with her Field Division.

There were, therefore, altogether about 200 General Staff officers with the mobilised forces of Germany at the outset of the campaign.

This number was raised during the war by the formation of new Army Commands, Army Corps, Reserve Divisions and Military Governments of the occupied parts of the enemy's territory (a corresponding reduction in the Military Governments at home should be set against this), so that at the close of the campaign there were 155 Prussian officers alone holding posts on the General Staff with mobilised troops, giving an increase of 17 officers from the opening of the campaign.

After peace was restored, the XIV and XV Army Corps formed, and the officers of the Grand Ducal Hessian, Baden, and Mecklenburg Forces at the same time amalgamated with the Prussian Army, the peace establishment of the Prussian General Staff was fixed as follows :—

a. Haupt-Etat.

- 1 Chief of the General Staff of the Army (one of his Adjutants was borne on the establishment of the *Adjutantur* and the other on that of the General Staff).
- 14 Chiefs of the General Staff of Army Corps (the Guard and Army Corps Nos. I to XI inc., and the XIV and XV Army Corps).
- 1 Chief of the General Staff with the General Inspection of the Artillery.
- 4 Chiefs of Sections of the Great General Staff.
- 14 Field Officers on the staffs of Army Corps.
- 30 Field Officers on the staffs of Divisions (including one with the Cavalry Division of the Guard and one with the Hessian Division (the 25th)).
- 10 Field Officers of the Great General Staff.
- 14 Captains on the staffs of Army Corps.
- 18 Captains of the Great General Staff.

Total, 106 Officers.

b. Neben-Etat.

4 Chiefs of Sections.

7 Field Officers.

18 Captains.

Total, 29 Officers.

Making a grand total of 135 officers.

The establishment for 1875 shows a further increase in the *Haupt-Etat* of 5 Field Officers, the object of adding these to the Great General Staff being that a sufficient number of military instructors for the War Academy should be furnished by the Great General Staff without interfering with the proper discharge of its other duties. The *Haupt-Etat* was further increased on the 1st January, 1876, by an additional Captain, on the formation of the Cavalry Division* of the XV Army Corps; and again on the 1st April, 1878, by an additional Field Officer, with a view of attaching officers of the General Staff to important Military Governments. The *Neben-Etat* was also increased in the year 1875 by 2 Chiefs of Sections, 1 Field Officer and 4 Captains, in order to bring the survey entirely under the sole direction of the Chief of the General Staff of the Army, and properly organise the increased duties that it had been called on to undertake. It was again increased by an additional Captain on the 1st April, 1882, to take charge of the Record Section of the Survey, which has to keep maps corrected up to date.

Thus the numbers became—

Haupt-Etat, 113 Officers.*Neben-Etat*, 37 „

Total, 150 Officers.

It was laid down by Imperial Order of the 27th December, 1881, that in future there was to be a Quartermaster-General belonging to the General Staff in peace as well as in war. In all General Staff matters he was to be regarded as the representative of the Chief of the General Staff of the

* Which has since been again disbanded.

Army, and as Director as regards the Chiefs of Sections of the Great General Staff (*Haupt-Etat* and *Neben-Etat*), the Chiefs of the General Staff with Army Corps, and with the General Inspection of the Artillery.

In the year 1886 the General Staff was increased by five additional Captains in the *Haupt-Etat* and two additional captains in the *Neben-Etat*.

With this a General Staff officer was allotted to each of the Military Governments of Cologne and Mayence, and one to the Commandantship of Posen. A Captain was posted to the newly-formed 33rd Division and one to the staff of the XV Army Corps respectively. The two additional Captains of the *Neben-Etat* were employed on the Survey, to which another Captain was subsequently added in 1888.

The appointment of Quartermaster-General, created in 1881, was abolished in 1889. Three Chief Quartermasters (Lieutenant-Generals or Major-Generals) were appointed instead, and these, so far as their work or duties were concerned, were placed immediately under the Chief of the General Staff. It was also laid down that the senior Chief Quartermaster in Berlin was to act as the representative of the Chief of the General Staff unless special orders were given to the contrary. The Chief of the General Staff was at the same time instructed to entrust one of the Chief Quartermasters with the general supervision of the training, &c., of the Railway Regiment and Balloon Detachment.*

A Captain was next attached to each Chief Quartermaster as "Adjutant." The *Neben-Etat* was consequently increased by three additional officers. The Great General Staff was again increased by three Field Officers as "Commissioners of Lines of Railway," and six Field Officers as "Railway Commissioners."

By Imperial Order of the 20th February, 1890, the Great General Staff was further increased by the following :—

- 1 Chief of a Section (Major-General).
- 4 Chiefs of Sections (Colonels).
- 5 Field Officers.
- 7 Captains.

* On the 1st April, 1890, the Railway, Telegraph and Balloon troops were placed under the newly formed Inspection of Communication troops.

The *Neben-Etat* was also increased by three Field Officers. One Captain was, however, taken from the staff of the XV Army Corps.

The General Staff of the Prussian Army thus consisted of:—

a. Haupt-Etat.

- 1 Chief of the General Staff of the Army.
- 3 Chief Quartermasters.
- 6 Chiefs of Sections.
- 19 Chiefs of Sub-sections.
- 117 Officers.

Total, 146 Officers.

b. Neben-Etat.

- 1 Chief of the Survey.
- 5 Chiefs of Sections.
- 52 Officers.

Total, 58 Officers.

To the above should be added:—

- 14 Field Officers as Commissioners of Lines of Railway.
 - 6 Field Officers as Railway Commissioners.
- As well as some 74 Lieutenants attached for duty.

Bavaria has a peace establishment of 24 General Staff officers, Saxony 11, and Württemberg 7.

During the succeeding years the following increases and changes took place in the Great General Staff:—

1894: One Field Officer (for the Central control of Surveys), one Captain (Chief Quartermaster-Adjutant). 1897: Of 20 posts for Field Officers as Railway Line and Railway Commissioners, three were changed into Colonel's and three into Captain's appointments.

On the 1st April, 1898, the *Neben-Etat* was amalgamated with the *Haupt-Etat*. About half of the officers belonging to the former *Neben-Etat* were taken into the General Staff, the remainder continued as "attached to the Great General Staff."

From this time on, 93 officers (16 Chiefs, 77 Field Officers and Captains) were told off as General Staff with troops, the remainder being designated as Great General Staff.

The latter now consisted of the following :—

- | | |
|---|---------------------------------------|
| 1 Quartermaster-General* | } One of whom as Chief of the Survey. |
| 3 Chief Quartermasters | |
| 14 Chiefs of Sections (Brigadiers or Colonels). | |
| 97 Field Officers or Captains. | |

Total, 115 Officers.

And about 100 First Lieutenants attached for training.

Also 20 Railway Line and Railway Commissioners.

Of whom 3 Field Officers (Colonels).

14 „ „
3 Captains, 1st Class.

To these must be added two retired officers (Field Officers or Captains) for work in the Historical Section and Library.

In 1899 the establishment was increased by one Railway Line Commissioner (Field Officer) and two pensioned (retired) officers. In 1901 it was further increased by one Field Officer as Railway Line Commissioner.

The General Staff with troops has been increased by four Field Officers and five Captains, owing to the formation of new commands, during the years 1899 to 1904.

The arrangement of the duties of the Great General Staff—among the Chief Quartermasters and Section Chiefs—depends on the instructions given by the Chief of the General Staff of the Army, and comprises :—

1. The preparation of the German Army and fortresses for war, the transport of troops during the mobilisation and concentration of the Army.

2. Obtaining information as to foreign Armies and Navies, and their progressive development, following military operations in foreign countries.

3. Training officers for the General Staff, including those for

* This designation has since been adopted again for the Senior Chief Quartermaster.

duty with troops and those officers attached to the Great General Staff for General Staff work.

4. Study of the latest questions regarding fortifications, rifles and guns.

5. Arrangement of the Imperial manœuvres.

6. Military histories.

The Survey Department consists of the Trigonometrical, Topographical and Cartographical Sections.

The Trigonometrical Section has to cover the whole country with a network of triangulation which serves for scientific and State purposes, as well as for the foundation of the topographical survey. It has also to determine all heights for the same purposes.

On every German square mile ten stations in stonework and a number of towers and other suitable buildings must be fixed. The Trigonometrical Section has to carry out the same work in the States of the German Confederation, with which an arrangement has been come to in the matter.

The Topographical Section carries out the topographical survey of Prussia and of the other German States, with the exception of Bavaria, Saxony, Würtemberg, Baden and Hesse, which are doing their own. The surveys are carried out almost exclusively on a scale of 1:25,000. To keep maps corrected up to date special reconnaissances are made.

The work of the Cartographical Section consists in—

A. Preparing, printing and distributing : (1) The plane table maps, scale 1:25,000; (2) the maps of the German Empire, scale 1:100,000 (plain and coloured); (3) the topographical general maps of the German Empire, scale 1:200,000; (4) the topographical special map of Central Europe, scale 1:200,000.

B. Preparing maps for special objects, *e.g.*, maps of environs of garrisons, of theatres of war, plans of battlefields, maps of China and South-West Africa.

C. Preparing maps for Army use, such as plans of garrisons, maps for manœuvres, field days and instructional purposes.

D. The custody and keeping corrected all maps, and their issue.

E. The execution of all drawing and printing work required by the Great General Staff.

The Great General Staff, together with the Survey Department, consists of—

270 officers (including officers attached for duty).

289 higher grade officials and 53 lower grade officials.

2. THE STAFF COLLEGE.

The Staff College having been placed, as regards instruction, under the Chief of the General Staff of the Army, by Imperial Order of the 21st November, 1872, it appears desirable to give a short description of the history and organisation of this Institution, which may be regarded, to a certain extent, as a training establishment or school for the General Staff.

The Staff College owes its origin to the experiences of the Great King in the Seven Years' War, and, indeed, to no small extent to the great decline in quality which took place in the officers of the Prussian Army, the best of whom had fallen on the field of battle. The national body of officers (*Offizierkorps*), with a code of honour laid down by Frederick William I, was unable to preserve its original quality intact during the trials of a long and costly war, and was obliged to fill up gaps with many men of a very inferior stamp, to whom not only the old Prussian officer's spirit, but military training as well, were entirely wanting. The King himself wrote as follows to Fouqué on the 27th April, 1764 :—

“As regards the private soldier, it will be precisely the same as it was before the war. But as regards the officer, the case is one of the greatest anxiety to me. With the object of making officers attentive to their duties, and giving them the power of reasoning for themselves, I have them now instructed in the Art of War, and they are taught to form their own judgment on everything they do. You will, of course, see, my dear fellow, that this method will not succeed with everybody, but that, at the same time, we shall eventually get from the

whole body certain men who will not only in course of time be generals by virtue of their rank, but, what is more, possess the necessary qualifications. ”

But the King did not stop with the introduction of this training, which was carried on in the principal garrisons. He went further, inasmuch as he desired his Army to be augmented by a scientific element, and this led to the foundation of the “New Academy,” for which Institution the necessary building land and grounds, on which our present Staff College (*Krieg's Akademie*) stands, were acquired as early as the latter part of the autumn of 1763.

The organisation of the Institution, which was intended by the Great King for the training of young noblemen, both for the military and diplomatic services, was undertaken forthwith under the direction of the King himself, by Major-General v. Buddenbrock,* who had been Chief of the Cadet Corps from the year 1759.

The new Institution was opened on the 1st March, 1765, under the name of *Académie des Nobles*, of which the first students were 15 selected cadets ; and we find the King himself carrying out a minute inspection of it as early as the 9th March of the same year.

Major-General v. Buddenbrock was appointed Director. The instructional *personnel* consisted of 5 governors, 5 professors, and a master of the French language. It received a total annual fixed allowance of 21,000 thalers (£3,150), so that the cost of instruction of each student was 1,400 thalers (£210) per head per annum. The King himself framed the Instructions on training, instruction and interior economy.

With the exception of some difficulties caused by the variable characteristics of certain masters and instructors imported from France, the Institution, on the whole, developed itself in accord-

* The statement made by the Belgian Captain Lahure (compare his work on the General Staff, page 79), that Frederick II selected a French officer as the first Director of this establishment, is incorrect. There was certainly no necessity for such a step after the experience of the Seven Years' War. The appointment has never at any time been held by an officer taken from the French service.

ance with the King's intentions, so far as the training of useful officers was concerned.

The King himself says, in his historical work: "l'Académie prospéra et fournit des officiers." Of 140 students who entered the Institution up to the date of the King's death, 104 left as military officers, and we find 6 holding the rank of General officer as early as 1806.

During the reign of Frederick William II the character of the Institution, which was now called the *Académie Militaire*, remained unchanged. A set of Instructions, issued on the 7th June, 1790, having reference to the many alterations that had taken place in military matters, is a proof of the interest which the King took in the Institution.

Frederick William III enlarged the Institution, and gave it the name of *Adeliche Militair Akademie* in the year 1804. In addition to the Inspector-General, Lieutenant-General v. Rüchel, and the Director, Colonel v. Kleist, there were 8 professors, 5 governors (3 of them being Captains), and 13 civil and military instructors for 15 royal and 30 boarding students.

The Academy, completely broken up by the events of 1806, was not re-established in the new army organisation which followed. It had hitherto furnished the Army with well-prepared material for forming officers, similar to the *Selecta* of the Cadet Corps of the present day, but the establishment which was now founded under the name of "General War School," or "General Military Academy" ("*Allgemeine Kriegsschule*" or *Allgemeine Militair Akademie*), by Royal Order of the 3rd May, 1810, was intended to carry out a far more extensive programme. The hitherto existing military training institutions, viz., the Engineer Academy founded at Potsdam in 1788, the Artillery Academy founded at Berlin in 1791, and the Academy for Young Officers founded at Berlin in 1804, were, in fact, simultaneously abolished. The latter, originally a voluntary society, had been given a more permanent character under the leadership of Scharnhorst, who himself gave instruction in strategy, tactics, the use of field artillery, and the duties of the General Staff. Frederick

William III granted to this institution an annual allowance of 3,000 thalers (£450) on the 21st June, 1804, ordering at the same time that young officers who had studied the elementary principles of the military and mathematical sciences and passed the necessary examination, and who desired to prosecute their studies further in the higher and applied branches of these sciences, should receive instruction in logic, pure and applied mathematics, artillery, fortification, the attack and defence of fortresses, tactics, strategy, military geography and assistance in the study of the history of the most instructive wars. The practical exercises were to include:—Artillery practice in firing shot, &c., mortar practice, manœuvring, constructing a field work, working out military projects with reference to ground in the neighbourhood of Berlin, and instruction in the use of surveying instruments. The course lasted from the 1st September to the 21st March. All officers of the "Berlin Inspection" and 20 officers of other garrisons had a right to go through the course. The former could also receive instruction in other sciences if they so desired. It is easy to perceive in this organisation traces of the main principles on which the present Staff College is founded.

The Institution which was founded in 1810 had, however, to undertake more extensive work. According to the desire of the King, expressed as early as the 8th September, 1809, to Major-General v. Lübzow, it was intended to form a school of instruction for all arms of the service, to take the place of those Institutions which were confined to training officers for one particular arm. The prospectus for the year 1810 lays down the object of the Institution as being to "prepare useful and in every way meritorious servants of the State, but especially to promote and maintain in the Prussian Army a spirit of duty and military knowledge which should make members of the Institution thoroughly capable of carrying out at all times any duty that might be entrusted to them, and impress them at the same time with certain high principles of fulfilling their duty towards their King and country. Men such as these,

possessing knowledge and a high sense of duty, are more likely to accomplish great results and to sacrifice themselves for the good of their country than those whose ideas are limited to the conception of a mere mechanical service." The Academy, divided into two classes, was intended both to prepare *Portpfeefähnriche** for the officers' examination and to afford an opportunity to young officers of acquiring higher scientific attainments.

These proposals were modified by the King, inasmuch as three War Schools (*Kriegsschulen*) for *Portpfeefähnriche* (at Berlin, Königsberg (in Prussia) and Breslau) and a War School for officers (at Berlin), which was under the same direction as the *Portpfeefähnrich* School at Berlin, were established. The War School for officers was intended for the higher training of more senior officers and for the study of certain professional subjects. It was pointed out that "although stress is laid on imparting to the student that special knowledge and skill which is required for his particular calling, nevertheless great attention must be paid, at the same time, to combine with this instruction an application of the power of thought, and the training of the mind and power of judgment are to be looked on as of the first importance."

The course lasted three years, beginning on the 15th October and ending on the 15th July. The general superintendence was under the Chief of the General Staff. In addition to the military board, there was a committee charged with the superintendence of the Studies. The latter consisted of two officers of special scientific attainments and two *savants* of known reputation, to carry on the scientific part of the work. The annual admission of students was fixed at 50, and made subject to an entrance examination.

The events of the year 1812, however, caused the officers' class to be broken up on the 24th March, and on the 18th

* The *Portpfeefähnrich* of the Prussian Army is a candidate for a commission, literally "Sword Knot Ensign." He is now called "*Fähnrich*."—(Tr.)

January, 1813, all the *Portépführer* at the War Schools were dismissed.

After peace was re-established the old arrangements were again adopted, with the exception, however, that the class for *Portépführer* was divided into two sections, one being for the training of Infantry and Cavalry officers and the other for that of the Artillery and Engineers. On the 1st September, 1816, however, the connection between the officers' and *Portépführer* classes was discontinued. All elementary instruction, which formerly took place in the second class, was to cease. In its place a two years' course was established in the Brigade Schools and a special training establishment created for the Artillery and Engineers.

The General War School (*Allgemeine Kriegsschule*), which was afterwards placed under the Inspector-General of Military Education and Training by Royal Order of the 26th December, 1819, was henceforth intended for those officers only who "after having acquired elementary knowledge in other establishments desired to increase and perfect the same in every province of the Art of War, in order to acquire the necessary skill for the higher and extraordinary demands of the service."

The course, as before, lasted three years, the number admitted annually being 40. The Institution, which received the name of Staff College on the 5th October, 1859, has experienced no material radical changes since the year 1816. The number of students has increased with the Army and amounts now to over 400. The three years' course has been adhered to. The Staff College was taken from the superintendence of the General Inspection of Military Education and Training by Imperial Order of the 16/21 November, 1872, and the general superintendence of the scientific training of the Institution placed under the Chief of the General Staff. This step, which corresponds with the principles on which the Army was re-organised in 1809, secures for the Institution, in addition to other advantages, that of the immediate care of the Chief of the General Staff of the Army in providing it with the very best military instructors, who, for the most part, belong to the Great General Staff.

At the present time the work of the Staff College is carried out by—

- 1 Director (General).
- 4 Members of the Committee of Management.
- 9 " " Studies Committee.
- 21 Military Instructors.
- 22 Civilian "
- 15 Officials.

3. GENERAL STAFF DUTIES WITH TROOPS.

Although only a part of the office work falls to General Staff officers with troops, a thorough explanation of this work seems desirable, as it is inevitable that the General Staff and Routine Staff officers are called upon to act the one for the other at times. General Staff officers, as the appointed representatives of the Chief of the General Staff, must make themselves thoroughly acquainted with the whole of the business procedure in the commands in all its branches. One may remark beforehand that as there is very little definitely laid down as to the conduct of business, the particular arrangements vary somewhat according to local and other circumstances. The description which follows therefore gives the duty of certain officials, and apart from what has been laid down by Imperial Order, must be looked upon essentially as a proposal, which has been tried and proved satisfactory.

A. STAFF OF AN ARMY CORPS.

"The instructions for the transaction of business with troops, dated the 12th July, 1828," serve as the basis on which to work. It deals specially with the conditions in an Army Corps Command, and, apart from such matters as have meanwhile undergone change, contains the following instructions which still hold good :—

All the business which arises in a command will be dealt with under one of four heads, viz. :—

Section I.—General Staff.

Section II.—Routine Staff.

Section III.—Legal (Judge-Advocate's Department):

Section IV.—Departmental (Intendence), medical and veterinary matters, religious matters.

Section I, in which are two officers* (Ia and Ib), deals with—

Marches, billeting, training of troops and manoeuvres, selection of manoeuvre areas, General Staff and tactical rides, mobilisation, roads, railways and communications, frontier and political affairs, strength, condition and distribution of the Armies of neighbouring foreign Armies, questions on Army organisation, matters connected with civil law, equipment of fortresses, maps, reconnaissances, the winter work of the officers of a scientific professional nature.

Section II, in which are two officers (IIa and IIb), deals with—

Orders of the day, garrison duties, states and reports, courts of honour, personal affairs of officers and men, offences against discipline, decorations, interior economy of units, reserve and Landwehr matters, discharges, invaliding, remounts, arms and ammunition.†

In Section III the Military Law Officials‡ deal with the following in so far as there is any question of law :—

Pardons, judgments in affairs of courts of honour, matters of discipline, complaints, inquests, press matters, requests for employment as artificers, discharges of men on account of offences committed before entering the service to be disposed of by the authorities, proof of property as marriage portion for officers, legal opinions for the Corps Intendence officials, examination of requests for appointments as military clerks.

The military law officers, apart from the above, have to deal with

* Several Army Corps commands have three officers in Section I.

† There is a Major on the retired list attached to every Army Corps command. How he is employed rests with the General Officer Commanding.

With the Guards Army Corps there is also an officer (Captain or Field Officer on the retired list) in Section II, who is in charge of the office concerned with the lists of, and all details regarding officers and men of the Reserve of the Guard. Another retired officer, as Section V, deals with questions as to invaliding from the Chinese Brigade and the previous expeditionary force.

‡ Two higher grade and one lower grade military law officials.

all the affairs of the General Officer Commanding in his capacity as arbiter of justice ; they, in addition, take part in the preparation and proceedings of the higher courts-martial as prosecutor or as judge (member). Their rights and duties are contained in the military law regulations ; they must always keep the Chief of the General Staff posted in all legal matters which arise.

The clerical work is always performed by a military clerk, the messenger work by a court messenger.

Section IV deals with—

By the Corps Intendant (*IVa*).—All matters of supply, finance, building and clothing, travelling claims, allowances, the personal affairs of the Intendence officials, paymasters, and other officials.

By the Corps Surgeon-General (*IVb*) (who also gives his opinion on the medical certificates given by the military surgeons in cases of discharges and invaliding).—The health of the troops and the personal affairs of the officers of the Medical Corps.

By the Senior Chaplain (*IVc*).—Religious matters, the personal affairs of the chaplains and vergers.

By the Corps Staff Veterinary Surgeon (*IVd*).—The care of the horses and the personal affairs of the veterinary officers, and officials.

The above distribution of duties may be changed by the General Officer Commanding, and the particular division of the work in Sections I and II, between the two officers working in each section, is subject to his decision.

The work done in Section I by the Senior General Staff officer, which consists principally in arrangements for mobilisation and for manœuvres on a large scale (Section *Ia*), is the most extensive and responsible work done by the Army Corps Staff. Although the position of this officer is less independent than that of a General Staff Officer with a Division, only such Senior General Staff officers are employed in Section *Ia* of the Army Corps Staff as have already filled this appointment with a Division. A change in the distribution of work in Sections I and II tends to enlarge the sphere of knowledge of the officers concerned. Opportunity for such change arises from leave, sickness, an appointment not being filled, when it is necessary for someone to act in the appoint-

ment. It is taken as a principle in these cases that the other officer in the section is to act for an officer who is absent.

The three military justice officials act for each other, or are represented by one of the military justice officials belonging to the garrison.

The Corps Intendant is replaced by a member of the Intendance, the Corps Surgeon-General by a Divisional Staff Surgeon (or the Garrison Surgeon), the Senior Chaplain by a Divisional Chaplain (or the Garrison Chaplain), the Corps Staff Veterinary Officer by a Senior Veterinary Officer belonging to the Army Corps. The Chief of the General Staff is responsible for all the office work of the Army Corps Staff. The officers and officials dealing with the work in the four sections, who are immediately under him, must first of all refer to the Chief Staff officer before they are permitted to interview the General Commanding.* The Chief of the General Staff decides in the first place whether matters are to be laid before the General or can be dealt with and disposed of in accordance with existing regulations without further reference. Interviews with the General Commanding take place on certain days of the week, the whole staff being present. The representatives of Sections III and IV bring forward their business first of all and are then as a rule allowed to go. The officers of the staff are present throughout the discussion of all matters affecting Sections I and II. Through their being present while the business of all four Sections is discussed, they gain knowledge of much outside their own particular department, which can but be of advantage to them during the course of their subsequent career in the service. Finally, the Chief of the General Staff, the remainder having taken their leave, will report any confidential matters that may have arisen. He will, of course, report any urgent matters to, or may receive orders from, the General Commanding at any time, irrespective of the periodical interviews referred to above.

Matters in hand will then be dealt with as quickly as possible or by some certain date, in accordance with the decision given.

* War Office Orders of the 20th May, 1830, and the 15th April, 1842.

It is the rule that no paper will be laid before the General Commanding for signature till the Chief of the General Staff has convinced himself that the decision arrived at by the General Commanding has been correctly carried out, or that a paper which has been prepared without special reference is in accordance with the existing regulations as regards its form and contents.

The responsible position occupied by the Chief of the General Staff, and the exact knowledge which he must always possess as to the intention and ideas of his General, have rightly led to special powers being given to him in order to accelerate the transaction of business. They were conferred by the Royal Order of the 28th August, 1814, and subsequently condensed in the following manner in the Royal Order of the 1st November, 1855 :—

“In reference to your proposal regarding the carrying on of work in Army Corps Staffs I have decided as follows :—

“1. During the absence of the General Commanding in cases where no special order has been issued by me, the Chief of the General Staff will deal with all current business ; he is also authorised to issue orders to the troops on his own responsibility in the name of the General Commanding in all pressing and urgent cases in which he is convinced that he alone is in a position to weigh and form a judgment on the existing circumstances of the moment.

“2. The General Commanding and the Chief of the General Staff must not, as a rule, be absent from Headquarters at the same time ; if, however, this be unavoidable, the authority given in para. 1 to the Chief of the General Staff will not apply to his representative, who is only empowered to deal with such business as necessitates no issuing of orders. Should the issue of orders be necessary, the matter must be laid before the Senior Divisional Commander for disposal. These orders are to be made known to the Army.

(Signed) “FREDERICK WILLIAM.

“*Sans Souci*, 1st November, 1855.

“To the War Minister.”

The above order is supplemented by the following Royal Order, dated 25th October, 1877 :—

“ I decree :—

“ 1. In the absence of a General Commanding in cases in which I have issued no special orders as to a substitute, questions as to confirmation of courts-martial, courts of honour and disciplinary punishments, decisions as to complaints, the functions which the law of the 31st March, 1873, regarding legal questions affecting Government officials, assigns to the General Commanding as president of a higher, national or superior service administration, and the General Commanding's powers for granting leave will be passed to the next Senior General, Divisional Commander or Governor.

“ 2. Para. 2 of the Order of the 1st November, 1855, concerning the disposal of business in Army Corps commands is therefore to be amended, so that it reads ‘ the next Senior General, Divisional Commander or Governor ’ in place of ‘ the Senior Division Commander.’

(Signed) “ WILLIAM.

“ *Berlin, 25th October, 1877.*

“ To the War Minister.”

The substitution of confirming officers subsequent to the introduction of the new Military Law Regulations is provided for by the Imperial Order of the 12th March, 1901 ; it reads as follows :—

“ With reference to your report of the 2nd March, 1901, I order the following :—

“ 1. The General Commanding cannot be represented in his capacity as Confirming Officer by the next Senior Division Commander or Governor in cases in which the Commander in question has already dealt with the case in the ‘ 1st instance.’ In such cases the latter's place will be taken by the next Senior General in the Army Corps.

"2. The Governor of a fortress will not be represented in the aforementioned cases by the Commandant, but by the Senior Division or Brigade Commander in the fortress at the time, the Governor of Berlin by the General Commanding the Guard Corps.

"3. The Commandant of a fortress having one Commandant can only be represented in his authority as Confirming Officer in appeal cases and cases of complaint by a Commander who has not dealt with the case in the '1st instance.' The General Commanding will arrange for his substitute in conformity with this Order.

(Signed) "WILLIAM.

"Berlin, 12th March, 1901.

"To the War Minister."

In the first-mentioned Order of the 28th August, 1814, it is particularly laid down that when the Chief of the General Staff is acting for the General Commanding, he will insert the words "By order of the General Commanding" above his signature.

The powers given to the Chief of the General Staff do not apply in the case of the Guards Corps, as, owing to the fact that the staffs of all three Divisions are located at the Corps Headquarters, it is certain that one of the Divisional Commanders will be there to act for the General Commanding during his absence. Consequently, as early as the 23rd December, 1816, a Royal Order was issued laying down that in the absence of the General Commanding, the Senior General present would act for him.

It may be remarked that the special cases in which the Chief of the General Staff would have reason to avail himself of the powers conferred in the Order of the 1st November, 1855, regarding the issue of orders to the troops, are only of exceptional occurrence.

In the event of the Chief of the General Staff and the Senior General Staff Officer being absent simultaneously, the Junior General Staff Officer will act for the Chief, even though Routine Staff Officers of the same rank be senior;* on the other hand, the

* Royal Order of 23rd June, 1817.

Senior Routine Staff Officer would act should he be of a higher rank than the General Staff officer.

It is not permitted that a retired officer on the Corps Staff should act for the Chief.*

A registrar, and certain clerks and orderlies are attached to the Army Corps Staff for the execution of subordinate duties.

The registrar, who is of N.C.O.'s rank, is immediately under the Chief of the General Staff and over the clerks and orderlies. The number of clerks (N.C.O.'s or privates with the colours) is laid down by regulation, but varies in the different Army Corps commands between seven and thirteen. In times of exceptional stress additional clerks are attached to assist.

Two orderlies are, as a rule, told off for the office of the Army Corps, and from the point of view of their military training it is desirable that they be frequently changed. The General Commanding can increase this number should he consider it desirable.

In comparison to the arrangements in some other countries the number of the staff told off for the carrying on of business appears very small; but the result of such a comparison is the conclusion that everyone has plenty to do.

The work is divided into current routine and special work. For the former, certain periods are fixed, within which it must be dealt with. It includes states and returns, also reports on certain natures of duties, petitions, the answering of which is desirable. Special work, that is such as is necessitated by special circumstances which may arise, must be dealt with as quickly as possible.

Every letter addressed to the Army Corps Headquarters is to be stamped with the date of receipt at once after being opened by the General Commanding or the Chief of the General Staff, and alongside it is noted the Section whose duty it is to deal with it. It is advisable to put the date of receipt (*e.g.*, 5/8.'04) always at the same place, somewhere above the heading of the document, as a certain regularity in this as in all office work

* Royal Order of 12th July, 1890.

facilitates the work which follows for those who have to deal with it. Trifling as this may seem, it is of importance at times when work is heavy.*

Letters which have not to be treated confidentially, but are passed on in the ordinary way, are handed over by the registrar to the clerk whose duty it is to keep the correspondence register.

The latter enters the business in the book in such a way that every in-coming document receives a consecutive number, and that the authority whence it originated, day of arrival, summary of contents, the number of any enclosures and the number of the Section dealing with it are all clearly entered. If the in-coming document has to do with any previous correspondence it does not receive a fresh number, but is entered under the number of the previous papers, or should it be given a new number a note must be made referring to the previous number. All legal matters are subject to the inspection of the Head-quarter's Staff † and must therefore be entered here.

The decision as to whether a document should or should not receive a fresh number naturally does not rest with the entering clerk; he receives his instructions in a practical manner from the form of the date of arrival. If, *e.g.*, this runs "5/8.'04," he would enter it under a new number; if, on the other hand, he finds the note "f. or for. (former) 5/8.'04," he understands therefrom that it is to be considered as a continuation, and enters it under the old number. It is very usual to stamp the date of return of a despatch under the heading of the document or under the reply; but the number of the Section dealing with it, if it has not to go on to another Section, is not entered again there.

When a matter has passed through the in and out register in the above manner, it is laid before the officer or official concerned

* The motive is the same as, *e.g.*, causes the Post Office to request that the addresses on letters should be written as far as possible in a similar form, that the stamps be placed in a certain position on the envelope, &c. It is, of course quite immaterial where the stamps are; but it is important that they should always be found in the same place.

† Order of the Pensions and Justice Department of the W.O. of 13.2.01, 04.2.01. C3.

by the registrar. The latter deals with it in accordance with existing regulations or with a previous decision of the General Commanding, or his instructions will be obtained at the interview. In all cases which are not met by existing regulations, it is advisable to look back in the files, to see if similar questions have previously been submitted and how they were dealt with. An opinion can then be formed as to whether, under the altered circumstances, somewhat different action is desirable. In the majority of cases it is better to adhere to former decisions. A settled course of action is thus arrived at, which eventually, if it does not lead to a decisive order, at all events ensures adherence to certain principles.

If several Sections are concerned in dealing with a subject, they do so in the sequence which is indicated by the Chief of the General Staff alongside the entry stamp. The last Section concerned has, allowing for any possible remarks or additions by the other Sections, to finish and see to the despatch of the papers; if necessary advising the other Sections of the result.

Papers may be dealt with either by minuting on the original or may require separate papers written on them.

The first method is the simpler and shorter, and should be employed whenever possible. Where separate papers must be written, it is not always necessary to keep a rough copy. Comparatively few officers, however, are able to write important memoranda straight off in an entirely satisfactory form. Thus a rough draft is prepared, as it were unintentionally, and, once made, may be kept as an office copy.

There are, of course, a certain number of documents received which simply have to be noted and require no further correspondence. If they have no importance for future use, they are destroyed, otherwise they are entered in the files.

It also often happens that documents have to be prepared in an office which do not result from correspondence received. Papers of this nature, prepared by order of the General Commanding on his own initiative, are called "Enactments" (Verfügungen).

Every paper, after receiving the signature of the General in command, must, before leaving the office, pass through the registry of in-going and out-going correspondence, and have the contents noted by the registrar.

The latter has to make a note of the date of completion and despatch, the address, the contents (in detail, if no office copy has been kept), the number of enclosures, if any, and whether the latter or the whole correspondence is to be returned from the person it is addressed to. The request that a portion or the whole of the document or documents may be returned is noted on the paper itself as well as in the registry, with simply the addition of the letter "R."

Correspondence, after passing the registry, must be immediately despatched under cover. On the latter must be written in addition to the address and the registered number of the contents, either the word "*Militaria*," in which case it goes free by post*, or else "*Portopflichtige Dienstsache*," in which case the recipient has to pay the postage. The latter course has invariably to be pursued when a letter is sent to a person in private life, containing nothing in the interest of the service but only what concerns the interests of the individual.

Correspondence which is to be treated as confidential, or which refers to personal matters concerning officers, is registered or distinguished externally by the addition of the word "Personal." Papers referring to matters of this description must be kept from the registrar and clerks. This necessitates a confidential register, called the secret book, being kept in which in-going and out-going correspondence of this description is entered by the Chief of the General Staff himself. This measure is absolutely necessary, as, for instance, questions referring to personal matters of officers of high rank can only be dealt with by the Chief of the General Staff himself. Confidential or secret matters, which can be dealt with by other officers of the Staff, are handed over directly to them by the Chief of the General Staff and are again returned directly to the latter for dispatch.

* But only outside the postal delivery district.

The labour of keeping a register which thus falls on the Chief of the General Staff may be somewhat lessened by his keeping a registry of matters dealt with by himself only, and causing correspondence connected with personal matters of officers and dealt with by some other officer of the Staff (generally the Senior Routine Staff Officer), to be entered by the latter in a separate or third register to be kept by him.

Besides the two (in some cases three) registers just referred to, there are also the following books kept for the purpose of regulating the transaction of business in the Army Corps Headquarters.

a. The Chief Index (*Hauptbuch*). This is a book containing the number of pages shown to be necessary, from experience, for each person, office, and establishment, directly in regular communication with the office of the General Commanding the Army Corps, so that every letter received or despatched may be entered, giving a short précis of the contents, together with the number and mark of the registry of in-going and out-going correspondence. This index also contains a list of names, alphabetically arranged, which have any important connection with past, or are likely to give rise to future, correspondence. By this "Chief Index," correspondence in the registry of in-going and out-going correspondence may be easily found when the number and mark of such correspondence is for the moment unknown.

b. The Order-Book (*Ordresbuch*). The originals of all Royal Orders received by the headquarters of the General Commanding are bound together in this book.

c. The "Carried Over" Book (*Restbuch*). It contains the numbers for fixed periods of time of such matters as are not yet completed. Though sometimes it is possible to finish off the work of a certain period in the time allotted, still this book is a very necessary reminder in cases where delay may possibly have been caused by oversight, especially in matters of minor importance.

d. The Return Calender (*Terminkalender*). This is a book which shows the periods of time fixed for the transaction of business on documents received or sent out periodically, and showing

not only the reports to be sent by, but also those to be addressed to, the General Commanding the Army Corps.

A register of the periods fixed for correspondence which is occasionally and not periodically received or despatched, must be kept separately.

Though the keeping and care of such registers is essentially the business of the registrar, nevertheless every Chief of a Section must be in possession of a copy showing a registry of the periods of time referring to matters belonging to his own particular Section.

e. The Office Records (*Actenverzeichniss*), which consists of a registry of all records, arranged according to the different branches of the office. The proper and careful arrangement of these is, it is scarcely necessary to point out, of immense importance.

Records are divided into general and special records. The former comprise a record of all Instructions and Memoranda, already issued. Thus, when reference is made in the issue of new Instructions to corresponding former issues, or to any Instructions referring to the same subject previously issued, an officer newly entering on the duties of the office can find sufficient *data* for acting on any special case that may occur.

Special records, on the other hand, consist of a collection of such special cases occurring in the different branches of the office as it is necessary to keep.

In certain cases the keeping of such records is imperative on the General Commanding the Army Corps, as, for instance, records of all cases referring to matters connected with the *personnel* of the Army, such as, for instance, dates of appointments and commissions. Lists of men invalided are sent to the district authorities, and judgments are kept in the Courts.

There are also many other cases in which a record should be kept of decisions arrived at by the General Commanding, with a view to the many and various applications and inquiries made by officers and men who have left the service, civil authorities, or private persons, which can then be dealt with at once.

The records generally can be better arranged and kept by the larger clerical staff belonging to the headquarters offices of the Army Corps than in the offices of subordinate officials. With a view of preventing the collection of records from becoming too bulky, they are gone through periodically and those cleared out which are of no further use.* This more particularly refers to special records, though the rule applies in certain cases to general records as well. But in the latter case it should be applied with the greatest caution, for though it may appear that the actual use of such records for the current duties of the office may be at an end, in consequence, perhaps, of a complete change of organisation, yet their historical value may often be of great importance. In a case of this kind, instead of making away with records, they should be provisionally extracted from the registries and handed over for custody to some permanent office, or given over to certain offices entrusted with the custody of archives, such as the War Ministry or the Great General Staff.

To the latter are sent, for instance, all records relating to matters taking place in time of war concerning warlike operations, battles, engagements or actions fought or undertaken, as well as records of matters referring to formations existing in time of war, but disbanded in peace. Special instructions are issued on the subject by the War Ministry on the conclusion of hostilities.

f. A register of Service Regulations. Two separate registers of these have to be kept up, one containing a general list according to the date of issue, and the other containing the Regulations, &c., arranged under headings for general use according to the subject.

g. A register of maps and handbooks bought out of the office allowance.

It is generally advisable to give an officer belonging to the Staff special charge of the funds which are intended to cover

* The following general instructions have reference to the destruction of useless records, viz., the Royal Cabinet Order of the 24th November, 1838, the Instructions of the General "*Kriegs Departement*" of the 28th August, 1855, of the "*General Auditoriat*" (Judge-Advocate's General Department) of the 9th September, 1855, and of the War Ministry of the 30th September, 1870, and the 16th November, 1873.

the purchase of writing materials, required for the use of the office, and which are administered by the registrar.

In addition to the general arrangement of office work just given, and which is followed more or less throughout the service, certain regulations are necessary, depending on special and local circumstances, concerning office hours to be observed by officers, and the subordinate staff, the duties of the clerk on duty for the day, orderlies.

It is generally advisable to collect the necessary rules on the above in a book of Regulations, and issue it to every person joining the office as a guide. It is not to be inferred by this that verbal instructions are inadmissible. It is, however, better if the latter are confined to special cases.

It is desirable to so arrange the office hours and interviews that officers can manage to ride every day.

B. DIVISIONAL STAFF.

The same rules and principles are observed in carrying on the office duties of the Staff of a Division as of that of an Army Corps.

A Divisional Staff consists of 1 officer of the General Staff, 1 Routine Staff Officer, 2 to 4 Judge-Advocates (*Auditeurs*), 1 Chief of the Divisional Intendance, 1 Divisional Surgeon, and from 1 to 3 Divisional Chaplains.

The sub-division of office duties is analogous to that of an Army Corps command, but the General Staff officer does not hold the same position or have the same powers as the Chief of the General Staff of an Army Corps. In the Divisional Staff he is simply Chief of a Section, and is only Chief of the office if he is senior in rank to the Routine Staff Officer of the Division, in which case he is responsible that the business of the office is properly transacted, without, however, having any jurisdiction in the actual transaction of business in any Section other than his own.

The legal work is carried out by the Judge-Advocates in

conformity with the instructions for Divisional Commanders and Judge-Advocates as in the case of an Army Corps command.

The number of Chaplains belonging to a Division is not always the same, varying according to the wants of the different persuasions.

The Chief of the General Staff of the Army Corps has power to give General Staff officers belonging to Divisions projects to work out of a military professional character.

The prescribed number of clerks and orderlies for the office of a Divisional command is two of each.

C. SPECIAL APPOINTMENTS:

The number of General Staff officers on the Staffs of several Army Inspectors varies. The sphere of action of Army Inspectors is naturally limited, and the duties of their Staffs are consequently not laid down on hard and fast lines, but depend on the instructions given by the Army Inspector concerned.

The General Staff officers in the fortress commands at Cologne, Königsberg, Mayence, Metz, Posen, Strasburg and Thorn work out the necessary details as to armament and equipment, and the plans for defence of the fortresses, and also the projects for exercises in fortress warfare.

There is one General Staff officer on the Staff of the Governor of Berlin and one on the Staff of the Inspector-General of Communication troops.

The official relations of Military Attachés, who belong to the General Staff or have been taken from it, to the Chief of the General Staff of the Army are regulated by special orders.

CHAPTER III.

THE GENERAL STAFF OF THE AUSTRO-HUNGARIAN ARMY.

OF the many extensive alterations which the Austrian army underwent in consequence of the war of 1866, and which resulted in the issuing of the "Regulations concerning the organisation of the Army," some affected the General Staff.

Up to the war of 1866 the General Staff had been a distinct corps, separate from the Army as regards establishment, promotion and uniform. It was directly under the War Ministry—the 5th Section of the latter corresponding to the Prussian "Great General Staff." There was also a certain distribution of General Staff officers to the higher commands in the Army, down to Brigade Staffs inclusive.

As might have been expected, after the war of 1866 many opinions, both in and out of the Army, put the responsibility of defeat on the General Staff, and declared that the assumed failure of the latter in their duties was an important cause of the disasters of the North Army.

The main question in reorganising the General Staff—a subject which was eagerly discussed in the Austrian military press—was whether the General Staff was to be retained as an independent corps or whether the duties of the General Staff, the necessity of which was not disputed, should not be provided for by officers taken from regimental duty.

The point in question was in fact an insignificant one in itself, provided the choice and training of the officers were based on proper principles. It was, however, as a matter of fact the more

rapid promotion, which had been enjoyed by the General Staff, that was the real reason of the hostility to it as it existed then.

It has since been considered necessary to determine the right to promotion in the Austro-Hungarian Army by law, and more especially to fix precisely the conditions under which promotion by selection should be allowed. The question of giving the General Staff a quicker promotion consequently vanished. The General Staff was deprived by the Regulations of 1871 of an independent establishment of its own, giving quick promotion, and the individual officers were shown on the promotion lists of their respective arms of the service. It was thus left entirely to themselves to make good their claims to promotion out of their turn, according to the general rules which applied to all alike. It may be assumed, of course, that the proof required was forthcoming in the case of any officer suited for the General Staff.

But in the year 1875 this was all altered. The Regulations published in this year gave the General Staff an independent establishment of its own again, as well as a greater independence as regarded the War Minister. In 1883 a new edition of the "Regulations on Organisation" was issued (*see "Verordnungsblatt"* for the Army of the 10th March, 1883), which, besides some minor alterations, gave the Chief of the General Staff a position independent of the War Minister altogether. His position is now much the same as that of the Chief of the General Staff of the German Army.

Previous to the year 1900 only the permanent Army had a General Staff, while with the Landwehr (in Austria there are large establishments existing in the Landwehr Divisions in peace) suitable Landwehr officers were entrusted with the duties of General Staff officers. In that year a General Staff was formed which was common to the permanent Army and the two Landwehrs (Austrian and Hungarian). The Austrian General Staff is at the present time organised as follows:—

The General Staff is intended, as a body, to be the mechanism for carrying on all the duties at the headquarters of the Higher Authorities and Commands, which are necessary both in peace

and war, for the management of the Army from a strategical and tactical point of view. Its duties extend, moreover, to all matters affecting military duties, organisation, distribution and training, and it acts as an advising agent in all matters connected with the armament and equipment of the Army. It comprises, in addition, the general military considerations of the defences of the Empire, the whole system of communications from a military point of view, the business connected with the military survey of the country, the geodesical and astronomical measurements of the Military Topographical Institute, and finally, all military scientific preparations for war, including the preparation of maps, which are comprised in General Staff duties.

According to the above the Austrian General Staff comprises the business of the General Staff and of the higher Routine Staff Officers with the troops (according to Prussian ideas), and also the work and duties which are carried on by the German Great General Staff. It includes, moreover, business which is carried on in Prussia by the War Office, and the 3rd, 5th, 6th and (to a certain extent) the 10th Sections of the War Office are worked by General Staff officers.

The Chief of the General Staff is directly under the orders of the Emperor. He is at the same time the assistant of the War Minister and as a rule submits his proposals to him. He can, however, in important matters that immediately concern the duties of the General Staff, make proposals and address reports to His Majesty the Emperor, acting as it were as Imperial War Minister. He is entrusted with all preparations for war of a strategical nature. Consequently he is concerned in all questions of a politico-military character, the war formations of the Army, mobilisation, defences of the Empire, railways and communications, and everything affecting the efficiency of the Army. The Military Geographical Institute is under him (in matters military and professional), and also the Railway and Telegraph Regiment in peace, the Staff College and the Military Archives. The Chief of the General Staff has a deputy.

The following are the Sections into which the Great General Staff ("General Staff in Vienna") is divided:—

a. The Directing Section manages all matters concerning the *personnel*, interior economy, and the internal and external correspondence of the General Staff.

b. The Section for military operations undertakes all work connected with organisation, mobilisation, projects for strategical concentrations, and suggestions and proposals as to fortifications. It is also entrusted with all matters connected with the organisation and training of the Army and consequently with the issue of regulations, instructions of a strategical or tactical nature, schemes for the big manoeuvres and the preparations for them.

c. The Section for instructional work and General Staff exercises deals with subjects connected with the further training of General Staff officers, tactical problems, General Staff and Departmental tours and the examinations for promotion to Major.

d. The Geographical Section deals with the military geography of foreign countries as well as of Austria-Hungary, and the records concerned therewith.

e. The Intelligence Section for collecting and compiling information on foreign Armies.

f. The Railway Section, including transport by sea.

g. The Telegraph Section for all matters connected with military telegraphs.

The Field Officers in charge of Sections are called Chiefs, those with the higher commands, including Divisional and Fortress commands and the Staff officer with the Hungarian Landwehr Cavalry Inspector-General who direct the work of the officers carrying out General Staff duties, are called "Chiefs of the General Staff of the x Command." They, with the other General Staff officers assigned to it, form the General Staff Sections of the x Command. The General Staff Sections have the same official relation to each other as the commands to which they belong.

The officers with Brigades, the Directors of Artillery and Fortress Artillery, who are concerned with the military routine

work, are called "General Staff officers of the x Brigade." Officers attached to the General Staff are employed in this way, and they are only exceptionally employed in the "General Staff Sections" (Great General Staff).

General Staff officers are also employed in the Imperial War Office (Central Section, 3rd, 5th, 6th and 10th Sections) and in the two Home Defence Ministries.

Officers of the General Staff, doing duty with the higher commands, are under the Chief of the General Staff as regards General Staff duty proper and scientific professional work.

The organisation of the Imperial War Office is as follows :—

1. Central Section : All secret or particularly important matters, Army organisation, personal affairs of Generals on the active list, Field Officers, and also of military officials of equivalent rank, issue of Army Orders ;
2. No. 3 Section : Organisation of Cavalry and Train troops, transport of all arms, and Army institutions, remounts, personal matters of veterinary officials ;
3. No. 5 Section : Plans of operations, training of the Army, drills, matters concerning the General Staff, military geography, the Military Geographical Institute, war records, communications, telegraphs ;
4. No. 10 Section : Mobilisation matters.

General Staff officers are also employed for preference—

1. In the Military Chancery (Military Cabinet) ;
2. As Personal Military Staff of His Majesty ;
3. As Staff officer to the Inspector-General of Cavalry ;
4. In the Military Survey ;
5. In certain special instructional appointments ;
6. On special duties and travels.

The peace establishment is shown in tabular form on page 70.

In the event of war the extra numbers would be found by calling in officers qualified for General Staff duty who were at regimental duty. The necessary Orders would be issued in accordance with the demands of the Chief of the General Staff.

Appointment to the General Staff in peace is made from

officers who possess the necessary professional qualifications, and who besides have been practically tested in General Staff duties. Officers are attached on probation with a view of being thus tested without any particular periods being fixed (officers are "attached for duty" in a similar way to the German General Staff). The conditions are: a minimum service of three years' regimental duty, a good character, a thorough general education and proof of military knowledge. Proof of the latter qualifications must be forthcoming in the shape of a certificate marked at least "good," and the decision stated in the final examination return of the War School that the officer is considered suitable for duty on the General Staff. In the case of Field Officers the necessary certificate is that of the prescribed examination for Field Officers of the General Staff. The selection of officers for transfer to the General Staff is left to the Chief of the General Staff, without any regard to rank or length of service or any defined periods of employment.

Promotion in the General Staff is regulated by the rules which apply to the Army in general. Promotion by selection on the General Staff is, however, unknown.

DISTRIBUTION OF GENERAL STAFF OFFICERS AT THE END OF 1903.

	General.	Lieutenant-Generals.	Major-Generals.	General Staff Corps.				Attached Officers.	Officers ordered to the General Staff.			Remarks.
				Colonels.	Lieutenant-Colonels.	Major.	Captains.		Major.	Captains.	Lieut. colonels.	
<i>Regular Army.</i>												
Chief of the General Staff of the Army, with one Captain as personal assistant	1	1	60 General Staff officers belonging to the General Staff Corps are doing duty with troops.
Deputy to Chief of the General Staff	..	1	..	..	..	..	..	..	..	..	..
In Sections of the General Staff	
Archives	
In the War Office	
With Army Corps Commands and the Zaru Command	
With Divisional Commands	
Brigade	
Fortress (Harbour) Commands	
Artillery and Fortress Artillery Directors	
In the Military Geographical Institute	
Under the President of the Committee for promotion to Field Officer	
In Staff College	
Military Academies and Cadet Schools	
Courses for Army Administration and Technical Military Committee	
Military Attachés	
Duty with Troops	
With the Austrian Landwehr	
" Hungarian "	
Total	1	2	2	38	74	73	213	217	2	30	..	

As an officer only requires to have completed three years' regimental duty to be eligible for the Staff College, and as the Staff College course only lasts two years, officers are comparatively young when they are appointed to the General Staff in Austria.

In 1903 137 officers were admitted to the Staff College. Of these, 117 belonged to the regular Army and 10 to each of the Landwehrs. Of the 117 officers of the regular Army, 82 were Sub-Lieutenants. As Sub-Lieutenants become Lieutenants on the average after four and a-half years' service, 70 per cent. of the officers entering the Staff College had less than four and a-half years' service. About a third of the previous graduates were admitted into the General Staff Corps.

To train officers of the General Staff in practical duties in the field, as well as to fit them for command, they are attached, on the recommendation of the Chief of the General Staff, to the different arms for one to two years. These periods are, as a rule, longer in the case of the arm of the service to which the officer in question belongs and shorter with the others. According to the regulations on promotion in force in the Austrian Army no officer can, as a rule, be promoted to General officer who has not commanded a regiment or battalion for two years. Promotion is in every case sanctioned by the Emperor.

As regards appointment to posts on the General Staff it is laid down that the Emperor himself appoints—

The Chief of the General Staff and his Deputy, the Commandants of the Staff College and the Military Geographical Institute and their Deputies, the Chiefs of Sections, the Director of Archives, the Section (Office, Department, Group) Directors of the War Office and Home Defence Ministries, and also the Chief of the III Section of the Technical Military Committee, all General Staff Chiefs of General's or Field Officer's rank, except those with Divisional Commands, all Colonels belonging to the General Staff Corps who are otherwise specially employed, personal Military Staff to His Majesty, the Field Officer on the Staff of the Inspector-General of Cavalry, the Military Plenipotentiaries

and Military Attachés, the Chiefs of the Sections dealing with operations and details of field railways and field telegraphs, the President of the Transport Committee.

Previous to appointment of Chief of the General Staff to an Army command, the General Commanding in question is consulted.

The appointment and employment of all other officers of the General Staff in the regular Army is in the hands of the Chief of the General Staff, in the Landwehrs it is left to the Home Defence Minister concerned.

CHAPTER IV.

THE GENERAL STAFF OF THE ITALIAN ARMY.

THE existence of an Italian General Staff dates as far back as the year 1655, when there was a Royal Piedmontese General Staff (*Corpo Reale di Stato Maggiore*). This was considerably expanded by the Royal Decree of the 24th January, 1861, by which the Italian Army was considerably increased and placed on an entirely new footing.

Changes have constantly taken place since then owing to new laws on army organisation.

At the present moment the establishment of the General Staff of the Italian Army is based on the law of the 22nd December, 1898, and is as follows :—

- 4 General Officers (Chief, Deputy Chief, a General Officer at the disposal of the Chief of the General Staff and a General Officer as Director of the Military Geographical Institute at Florence).
- 137 Officers of the General Staff (15 Colonels, 3 Colonels or Lieutenant-Colonels, 45 Lieutenant-Colonels or Majors and 74 Captains).
- 127 Officers "seconded": 1 Colonel from the Engineers as Chief of the Technical Section, 1 Colonel as Sub-Director of the Military Geographical Institute at Florence, 31 Captains, 79 Captains "attached" to the General Staff with troops, 13 Captains at the Military Geographical Institute at Florence.
- 1 Surgeon.
- 3 Administration Officers (1 Lieutenant-Colonel or Major, 2 Captains) with the Great General Staff.
- 9 Paymasters (1 Lieutenant-Colonel or Major, 1 Captain, 3 Lieutenants) with the Great General Staff, 1 Lieutenant-Colonel or Major, 1 Captain, 2 Lieutenants at the Military Geographical Institute at Florence.

This establishment includes General Staff officers belonging to the Great General Staff, Army Corps and Divisional commands, and the Commandants of three large fortresses.

Officers of the General Staff are, besides the above, borne on the establishments of the military households of the King and Royal Princes, the list of Military Attachés, the War Office, the Staff College and War Schools, and the Survey (Military Geographical Institute).

1. THE CHIEF OF THE GENERAL STAFF.

The Chief of the General Staff of the Italian Army is entrusted with the preparation in time of peace, and execution in time of war, of all military operations, but *under* the Minister of War. He submits his proposals as to organisation and the defences of the country to the War Minister, and prepares, with the co-operation of the latter, the main principles on which the mobilisation and concentration of the Army are to be effected, and reports on questions concerning the defences of the country, so far as these are likely to affect operations in the field.

The Chief of the General Staff is entrusted with all matters concerning the appointment, promotion and employment of officers of the General Staff, and is *ipso facto* Chief of the Great General Staff.

He has directly under him the Military Geographical Institute at Florence, the Staff College (*Scuola di Guerra*) at Turin so far as instruction is concerned, and the Railway Battalion (*Brigata Ferroviari*) (four companies at Turin and two companies in Rome) as regards technical duties.

In war the Chief of the General Staff is called upon to prepare and lay before the Commander-in-Chief everything that in any way may concern the operations of the Army in the field. It is his duty to communicate the opinion of the Commander-in-Chief, in the shape of orders and instructions, to the Generals commanding Army Corps, &c., and to see that they are carried out.

The Chief of the General Staff has his deputy as assistant, who

1. THE CHIEF OF THE GENERAL STAFF OF THE ARMY. 75

in war is entrusted with the "operations" Section at the Commander-in-Chief's Headquarters.

The General at the disposal of the Chief of the General Staff would be appointed in war either as Inspector-General of Railways and Lines of Communications, or else as Chief of the Staff of the same.

2. THE GREAT GENERAL STAFF.

This comprises—

- 3 General Officers (Chief, Deputy and a General Officer attached),
- 14 Field Officers of the General Staff,
- 25 Captains of the General Staff,
 - Seconded: 1 Colonel of Engineers as Chief of the Technical Section,
 - 31 Captains "attached,"
- 1 Surgeon,
- 3 Administration Officers,
- 6 Paymasters.

To these should be added a certain number of Military Attachés abroad and various officers attached according to circumstances.

The Great General Staff is divided into—

- a. The central office of the Chief of the General Staff of the Army, 1 Colonel (as his secretary) in charge.
- b. The Department for Military Operations, 1 Lieutenant- or Major-General in charge.
- c. The Administration Department, 1 Lieutenant- or Major-General in charge.

The Generals in charge of *b* and *c* Sections correspond somewhat to the German Chief Quartermasters (*b* equals Chief Quartermaster I Section and *c* equals Chief Quartermaster II Section).

a. The central office collects and arranges the work of the two principal departments, deals with secret business and affairs concerning the General Staff with Troops and the Great General Staff. In addition, under *a* are :—

- The Staff College,
- The Railway Battalion,
- The Military Geographical Institute at Florence.

b. The Department of Military Operations (*Riparto Operazioni*) consists of—

The Section dealing with the eastern theatre of war (Austria and the countries to the north-east),

The Section dealing with the western theatre of war (France, Switzerland and the countries to the north-west),

The Section dealing with the southern theatre of war (the countries beyond the sea and the colony of Eritrea),

The Technical Section.

The Chief of the Department for Military Operations is President of a Great General Staff Committee, the members of which belong to *b* and *c* Departments, the object of which is to consider, from the point of view of home defence, projects for new railways, roads and canals. In time of war he takes over the duties of the Deputy to the Chief of the General Staff. In November each year the Captains and Lieutenants who have successfully passed through the Staff College, are attached to his Department for six months' duty to test their suitability for the General Staff. These officers are detailed to the different Sections, where they are employed in General Staff work at Headquarters and in the country. At the conclusion of this period a Committee decides as to their suitability for appointment to the General Staff. The Chief of this Department has an office (sub-section for current business) and has the Historical Section with the Archives under him.

c. Administration Department (*Riparto Intendenza*) is divided into—

The Intendance Section (*Ufficio Intendenza*),

The Transport Section (*Ufficio Trasporti*),

The Accounts Section (*Ufficio Contrabbili*).

The officers appointed as "Inspectors of Lines of Communication" in case of war, and the Chiefs of Staffs to Inspectors, are annually instructed in this Section in the duties they would be called upon to perform. The Section further appoints the Commissioners of the Central Transport Commission, which is entrusted, in conjunction with the representatives of the Great

Railway Companies, and under the presidency of the Chief of the Administration Department, with making the necessary arrangements in peace for the transport of the Army by rail in case of war.

Officers of Artillery, Engineers and of the Medical and Veterinary Corps are also attached to this Department. The Chief of the Administration Department in time of war becomes Intendant-General.

Every year the Generals and Field Officers who have been selected as Army Intendants or Chiefs of the Intendantur Staff in case of war are attached for a time to this Department.

The Intendance Section deals with matters concerning the organisation and management of all the administrative branches of the Army.

The Chief and Field Officers belonging to the Transport Section are Railway Commissioners, that is to say, officials representing the War Minister in dealings with the Ministry of Public Works and private Railway Companies. The office is in Rome, and they are only sent to other places as circumstances require.

From March to July every year a certain number of subaltern officers, both on the active and reserve lists, are attached to the Transport Section for certain practical exercises, with a view to training them for the various duties they would have to perform in war as station Commandants and Railway Line Commissioners.

The Accounts Section has charge of the pay and accounts of the Great General Staff.

Officers of the General Staff belonging to the Great General Staff, as well as those attached to commands who are called up for the purpose, are practised with a view to keeping up their professional knowledge with schemes, plans, projects, war games, General Staff tours and lectures.

The officers of the Great General Staff would be taken in war to fill posts and appointments on high commands and military administrative Staffs, the office of the Great General Staff itself being then left merely in charge of plans, documents, records, &c.

The Military Geographical Institute at Florence.

The General Staff of the Piedmontese Army possessed a *Topografia Reale* even before the end of the eighteenth century. The present Military Geographical Institute owes its origin to this, though it is now of course very much enlarged. It was given its present title and a new organisation in 1872, and was re-organised again in 1882. Its object is the survey of the country.

The establishment is fixed at—

- 1 General Officer as Director,
- 1 Colonel "seconded" as Sub-Director,
- 2 Lieutenant-Colonels or Majors "seconded,"
- 13 Captains "seconded,"
- 10 Surveyors,
- 110 Topographers,
- 4 Paymasters (1 Lieutenant-Colonel or Major, 1 Captain, 2 Lieutenants).

There is a Central Section and four other Sections. The former consists of an office for general duties, a depôt for foreign maps, a depôt for the custody, sale and issue of Government maps, and an office for pay, accounts, &c.

The four Sections are—

- 1. The Geodesical Section, for trigonometrical work,
- 2. The Topographical Section,
- 3. The Artistic Section, for drawing, engraving and lithography,
- 4. The Photographic Section.

As in Germany survey work is carried out every year. In Italy the maps produced are not all placed on sale to the public.

3. OFFICERS OF THE GENERAL STAFF WITH THE TROOPS.

The Staff of an Army Corps comprises—

- 1 Colonel as Chief of the Staff.
- 1 Lieutenant-Colonel or Major.
- 1 or 2 Captains.
- 2 or 3 "attached" Captains.

3. OFFICERS OF THE GENERAL STAFF WITH THE TROOPS. 79

The Staff of a Division comprises—

- 1 Lieutenant-Colonel or Major as Chief of the Staff.
- 1 or 2 Captains of the General Staff.
- 2 or 3 "attached" Captains.

The duties are much the same as in the German Army, but the General Staff performs the duties of the Routine Staff Officers.

In Africa (Eritrea colony) there is 1 Lieutenant-Colonel or Major as Chief of the Staff to the troops.

APPOINTMENT AND PROMOTION OF GENERAL STAFF OFFICERS.

Appointment to the General Staff is only made from officers who have passed the Staff College successfully.

Admission to the latter is made the subject of an examination, and Captains and Lieutenants can compete. The course lasts three years. Each annual batch consists of at most 50 students (Captains or Lieutenants, of whom 48 may belong to Infantry and Cavalry, 12 to the Artillery and Engineers). At the end of the first and second years' course each student does a two months' training with the other arms.

At the conclusion of the third year they are attached as Orderly Officers to the higher Staffs during the manoeuvres. Officers who have gone through the three years at the Staff College successfully are noted for accelerated promotion and consequently all get some advantage from their work.

Officers nominated to the General Staff have first to prove their fitness by doing duty with the Great General Staff for a period of six months and then on the General Staff with troops, but cannot be appointed to the General Staff before they have commanded a company, squadron or battery for two years.

Captains of the General Staff are promoted to Major when they have reached the senior fifth of the total rank, having done at least two years' regimental duty with their own arm.

The promotion of Majors of the General Staff to Lieutenant-Colonels takes place when they have reached the senior tenth of the Major's rank.

Lieutenant-Colonels of the General Staff are promoted to Colonel in their turn with others of the same rank in these arms. When promoted they are, as a rule, obliged to rejoin their arm.

Colonels cannot be promoted, as a rule, to Brigadier-General or Major-General without having previously commanded a regiment for two years.

CHAPTER V.

THE GENERAL STAFF OF THE RUSSIAN ARMY.

THE Russian General Staff dates from the time of Peter the Great. The appointment of the first "Quartermaster-General" in the year 1701 was soon followed by an increase in the General Staff, so that in the year 1720 we find the following:—

At Headquarters: 2 General Staff Quartermasters and 2 Staff Quartermasters.

For the two formed Armies: 2 Quartermaster-Generals, 2 Lieutenant Quartermaster-Generals, 5 Chief Quartermasters, 2 Captains and 8 Lieutenants.

Officers were appointed straight from regimental duty, and wore no distinct uniform. The above appointments formed, moreover, a portion of the general list of the whole Staff of the Army, which consisted of upwards of 300 officers, &c., comprising every one from the Commander-in-Chief to the provost, who was not actually doing regimental duty.

As regards the special requirements that were expected from the Quartermaster-General, we find the following in the Regulations of the year 1716:—"He must be brave and intelligent, and skilled in geography and fortification, for he has to plan marches and select positions for field and permanent fortifications. He must also know both his own country and that of the enemy, and at the same time know both Armies intimately. During marches he should be, with his subordinates, with the advanced guard or outposts."

During the government of the Empress Catherine II the officers of the Quartermaster-General's branch were separated from the Staff, and formed into *one* Staff, under the title of "General Staff," and given a special uniform. This, organised

alike both in peace and war, comprised 40 officers, including Divisional Quartermasters with the rank of Captain or Lieutenant. The General Staff was to collect beforehand in peace time intelligence concerning the frontier districts, and in war to report on the situations of all Divisions and Columns, assign roads to them, and accompany columns and detachments. The Russian General Staff appears in a much more distinct formation under the direction of General Baur, an officer who had been obtained from a foreign service, and who served in the Turkish campaign as Quartermaster-General of the First Army as early as the year 1769. The establishment in the year 1772 included, in addition to him, 2 Lieutenant Quartermaster-Generals, 10 Chief Quartermasters (Field Officers), and 24 Divisional Quartermasters; 60 non-commissioned officers were employed as "Column Guides," and were to be thoroughly trained in the duties of the General Staff in peace time, by lectures given them by the Quartermaster-General, and by training in surveying, &c. Appointment to the General Staff was in the hands of the Quartermaster-General, quite independently of the Commander-in-Chief of the Army.

This rule, however, did not hold good for any considerable length of time, for, under the successor of General Baur, Generals holding commands chose their own General Staff officers for themselves, without regard to any previous special training, and the Quartermaster-General then lost all control over the appointment to, and training of, the General Staff.

One of the first steps taken by the Emperor Paul in the government, was to break up the whole of the General Staff on the 13th November, 1796, and distribute the officers in the Army.

Three days afterwards the "Suite of His Majesty for the duties of Quartermaster" was formed in its stead, and General Araktschejeff placed at the head of it as Quartermaster-General on the 19th April, 1797. Appointments to it were made partly from former General Staff officers and partly from the Cadet Corps. Drawing and surveying seem to have been considered especially important as regards training in peace time, which is

evident from the existence of a "Drawing-Room of His Majesty," as well as from the establishment of "His Majesty's Private Map Dépôt."

The government of the Emperor Alexander I is in every respect remarkable for the improvement of the military strength of Russia. Consequently the due development of the "Suite of His Majesty for the duties of Quartermaster" was not neglected. There was apparently even then no fixed establishment, and had there been the numerous wars would have rendered it impossible to keep it up to strength. There were, in the year 1803, 106 officers belonging to it; in the year 1811 this number had risen to 152; and in the year 1814* there were 217 officers carrying on the duties of the General Staff, mostly in the lower ranks, inasmuch as the proportion was 1 Field Officer in every 4 officers. From the year 1810 the Mathematical Society of the Moscow University afforded an opportunity of further general scientific training to the candidates for "Column Guides," who had been brought together, under the supervision of General Murawieff, for regular courses in General Staff duties.

At the same time, the formation of a Central Direction for the business and duties of the Quartermaster-General's Department was begun in the year 1810, the first steps taken being the establishment of a chancery, library and mechanical workshops.

The "Headquarters Staff of His Imperial Majesty" was created by a Ukase of the 12th December, 1815. Prince Wolkonski was appointed to it as Chief, and at the same time entrusted with the Chief Direction of the Quartermaster-General's Department, in which he was assisted by the appointment of a Quartermaster-General and a Director of Administrative Affairs. The former had direction and charge of everything connected with the marches, quarters and military operations of the troops. This business was carried on in the chancery by two departments—

* Certain officers of the "Suite" were given, in 1814, the rights of the Old Guard, as a privilege, and were formed into the so-called "Guard General Staff" which enjoyed certain advantages as regards promotion. They gradually absorbed a third of the whole "Suite." The Guard General Staff was abolished in 1864.

viz., the Topographical and the Marching Roads Departments. The Administrative Affairs included the chancery of the Chief of the Quartermaster-General's affairs, personal matters and accounts, the printing office of the Headquarters Staff, the library, the observatory, the mechanical workshop, and from the year 1826 the Military Topographical Dépôt as well.

The Central Direction of the General Staff, thus firmly organised, formed, as it were, a branch of the Headquarters Staff, the Director of which was the Quartermaster-General. The Headquarters, Corps and Divisional Quartermasters attached to the commands of troops were placed under him.

The supply of officers trained in the military sciences was maintained up to the year 1826 by the "School for Column Guides," previously mentioned, founded by General Murawieff, and carried on afterwards by his son. Both theoretical and practical instruction was afforded by this school to young men, who lived, however, at their own expense during the winter at the house of Murawieff in Moscow, and during the summer at his country seat.

But in the meanwhile a school for officers, comprising two classes, had been opened at the headquarters of the First Army at Mohileff, the first class being especially intended to give instruction in Quartermaster-General's duties. From the year 1826 to the year 1832—the date of the founding of the "Military Academy"—this was actually the only training establishment of the kind in the country.

The want of an extended survey, which, from the huge dimensions of the Russian Empire was a very large undertaking, was met in the year 1822 by the creation of a special topographical establishment. It consisted of as many as 50 officers and 347 non-commissioned officers on the 1st January, 1832. The former belonged to and were promoted with the officers of the "Suite of His Majesty for Quartermaster-General's duties." The latter received the name of "General Staff" on the 27th June, 1827, and on the 28th March, 1832, a fixed establishment, consisting altogether of 17 General Officers, 80 Field Officers and

200 Officers below this rank. In addition to this, the establishment of the Topographical Corps was increased to 70 officers and 456 surveyors (non-commissioned officers and privates).

History now brings us to the alterations which the Emperor Nicolas made in the General Staff, as well as in the position of its Chief. The post of "Chief of the Headquarters Staff" was replaced in the year 1836 by a War Minister. From that date the War Office included a "General Staff section," with a Quartermaster-General as Director. It was divided into three sections. The first was entrusted with the quartering and movements of troops, the second was the Military History Section and the third the Accounts Section.

There was in addition a General Staff of the troops, which, independently of the Army Staff, comprised four Field Officers and four officers below that rank, with each Army Corps command, and two officers below the rank of Field Officer with each Divisional command.

As a preparatory school there was the "Military Academy" founded by the Emperor Nicolas in the year 1832, on the recommendation of General Jomini, and afterwards called "the Nicolas Academy." It was intended to turn out annually from 40 to 50 trained Staff officers, but this number was far from being attained during the first 20 years of its existence. In the year 1854 the Academy was severed from its immediate connection with the Quartermaster-General's Department and placed directly under the Tsarévitch.

Generally speaking the organisation of the General Staff, just described, remained almost unchanged till the early part of the reign of the Emperor Alexander II. It was not until the re-organisation of the Russian Army, which took place in consequence of the Crimean war, and has since been steadily carried out, that the General Staff was put on a different footing. In this, three points were mainly considered, viz :—1. The completion of the General Staff. and in connection therewith the importance of the Nicolas Academy of the General Staff. 2. The Central Direction of the General Staff. 3. The special service conditions of the officers of the General Staff.

Admission to the Academy, which from the year 1857 had been on more general lines, was, from the year 1863, limited to officers who had at least performed four years' actual duty. At the same time the Quartermaster-General again took over the scientific direction of the institution, which now was intended avowedly to be a preparatory training establishment for the General Staff.

The reorganisation of the Central Direction of the General Staff was immediately connected with the introduction of the "Military District" system, instead of the "Army Corps" system, together with other alterations arising therefrom in the higher branches of military administration. Matters were in a transition state in the year 1863, when the hitherto existing "General Staff Section" was changed into a "Chief Direction of the General Staff," with a Quartermaster-General at its head.

After the abolition of the "Guard General Staff" (November, 1864), new regulations were issued in January, 1865, on the promotion and such like matters of General Staff officers.

The transition period just mentioned came to an end in the year 1865, when the post of Quartermaster-General was abolished and the Chief Direction of the General Staff was amalgamated, under the name of "Headquarter Staff," with that department of the War Office, which corresponds, to a certain extent, with the Prussian "General War Department."

The "Regulations for the Administration of the Army in the Field" of the 17th April, 1868,* the "Regulations concerning the War Office" of the 1st January, 1869,† and the "Regulations of the Topographical Corps" of the 24th December, 1865,‡ finally establish the organisation and duties of the Russian General Staff, the principles of which are still adhered to in the General Staff of to-day.

* As amended by Regulations of the 9th March, 1890. (Note by General Staff.)

† "Regulations for the Headquarters Staff," issued with Army Order 133, of April, 1903. (Note by General Staff.)

‡ As amended by Regulations of the 1st July, 1887. (Note by General Staff.)

I. THE CORPS OF OFFICERS OF THE GENERAL STAFF.

There is no fixed establishment of the General Staff laid down. The Regulations merely define the posts that must be held by officers of the General Staff, the appointments that may be held by them, and which officers other than these are to be entered on the strength of the General Staff. A list of all General Staff officers is kept in the Headquarters Staff.

According to this the following are General Staff officers :—

- a. The Chiefs of the Military District Staffs, and officers holding appointments set aside for officers of the General Staff, either with troops or in Administrative Departments ;
- b. Military attachés abroad, professors and instructors in the three Military Academies (General Staff, Artillery and Engineer Academies), and Chiefs of the War and Cadet (*Junker*) Schools ;
- c. Aides-de-camp of the Emperor. Aides-de-camp of the members of the Imperial family, or officers attached to their households, Aides-de-camp of the Commander-in-Chief or War Minister, or officers attached to them, and Aides-de-camp of the Chief of the Headquarters Staff ;
- d. Officers holding appointments such as are set aside in the chief administrative departments of the War Office, officers permanently or temporarily attached to other Ministries or to the War and Cadet (*Junker*) Schools.

The uniform of the General Staff is only worn, however, by Generals belonging to the General Staff, Field or other officers shown under *a* and *b*,* and General Staff officers temporarily attached to other offices. All other officers belonging to the General Staff wear the uniform of their rank and regiment.

On the 1st January, 1904, there were 63 Generals, 113 Lieutenant-Generals, 163 Major-Generals, 213 Colonels, 222 Lieutenant-Colonels, 173 Captains.†

* The Chiefs of the District Staffs wear the uniform of the General Staff though they may not be shown on the list of the same.

† The rank of Major does not exist in the Russian Army.

2. THE HEADQUARTERS STAFF.

The "Headquarters Staff" was made part of the War Office as its fifth department, by a *Priyase* of the 1st January, 1869. In Russia there is no head of the General Staff, who is independent of the War Office.

The Chief of the Headquarter Staff is, however, the first representative of the War Minister in military matters, and is immediately under him. This does not, however, allow him to take the War Minister's place as president in Councils of War. The Chief of the Headquarters Staff performs, under the War Minister, those duties which in Prussia, speaking generally, would fall to the lot of the Chief of the General Staff of the Army, the Director of the General War Department (*Allgemeines, Kriegsdepartement*) and the Chief of the Military Cabinet. Nor is there a "Great General Staff," with its analogous special duties, as in Prussia. Such duties are in Russia carried on by the Headquarters Staff, together with other work, which in Prussia would be assigned to Departments of the War Office.

The Chief of the Headquarters Staff (Lieutenant-General or General of Infantry, Cavalry or Artillery) has two Aides-de-camp and a chancelry numbering 15. He is aided in addition by two Major-Generals and two Field Officers of the General Staff.

He is responsible for keeping the training of the General Staff and of the Military Topographical Corps up to the standard of modern requirements, for the proper performance of their duties, and for the supply of officers for the General Staff. He superintends the Nicolas Academy of the General Staff, the Military Topographical Department, the Military Topographical School, the Cadet (*Junker*) Schools, and the Corps of Orderlies (*Feldjäger Korps*). All questions of promotion on the General Staff, as well as all appointments to it, are submitted to him for approval. He holds the rank and position of a General Commanding a Military District so far as the officers under him are concerned. In the event of the Chief of the Headquarter Staff being absent, the War Minister orders one of the Quartermaster-Generals or the "duty" General to act for him.

The Headquarters Staff has, since the 1st (14th) May, 1903, been divided into 5 principal Departments, comprising 24 sections, 3 sub-sections, 4 committees, &c. At the present time they are as follows :—

The Department of Quartermaster-General, I ; the Department of Quartermaster-General, II ; the Department of the "duty" General ; the Department of Military Communications ; the Department of Military Topography.

Each of these principal Departments forms one or two divisions, each division is sub-divided into sections, each section into sub-sections. At the head of the Departments are Generals, and in charge of the sections are Generals or Colonels.

1. Department of Quartermaster-General, I :—Sections 1 to 3, which are independent (not organised as a division), deal with Army organisation, armament, clothing, equipment, quartering, training, manœuvres, regulations, training and personal affairs of General Staff Officers, the General Staff Academy. The Asiatic division comprises sections 4 and 5. The 4th section deals with the Caucasus and Turkistan. It also deals with the instruction of officers and officials in Oriental languages. The 5th section formerly attended to matters concerning Siberia, the Amur Province and Kwantung District. Owing to the appointment of a Viceroy "for the Far East" (Kwantung District, the Amur Province and Coast District), and owing to the war with Japan, the existing arrangements for administration will probably be altered.

2. Department of Quartermaster-General, II.—The military statistical division deals in the 6th section with the collection, elaboration and distribution of military statistical matter regarding European and Asiatic Russia, while in the 7th section intelligence as to foreign countries is dealt with (6 sub-sections, of which No. 1 has charge of Germany). The 8th section comprises the military history archives and the library. The 9th section deals with the statistical concentration and movements of the Army, and is not in a division. The mobilisation division

comprises the 10th section, which deals with recruiting in peace time, reserves, home defence, and the 11th section, which deals with supply of men in war, calling up of reserves and remounts.

3. Department of the "duty" General.—It deals only with matters which would in Germany come under the War Office and Military Cabinet. The "Chancery of the Headquarters Staff" (Office) is also under it.

(a) Division 1.—

12th section: Men, terms of enlistment, voluntary enlistment (re-enlistment), provisioning of the Army.

13th section: officers, promotions and transfers.

14th section: officers, appointments.

15th section: Rewards, decorations, allowances.

16th section: Courts of honour, administration of the law.

(b) Division 2 ("Privy Councillor").—

17th section: Officers, retirement pensions.

18th section: Provision of money and accommodation for troops; also, general archives, military printing office.

(c) Chancery: Clerking, messenger service, periodicals, cash.

4. Military Communications Department.—Corresponds to the railway section of the Prussian General Staff.

(a) Division 1 (arrangements for the Army in peace).—

19th section: Affairs of officers, transport of troops by rail in peace, railway troops, and the Amudarja flotilla.

20th section: Transport of troops by water in peace, transport of stores.

21st section: The construction and repair of the network of railways and roads.

(b) Division 2 (preparations for war).—

22nd section: Transport of troops in war.

23rd section: Concentration by rail, time tables, foreign countries.

24th section: Lines of communication of the Army.

5. Military Topographical Department.—This corresponds to the Survey Department of the Prussian General Staff, and includes the chancery, the geodetic section, the triangulation, topographical survey, the administration of maps (drawing, engraving, printing, photography, care and distribution of maps). The Military Topographical School is under its supervision.

The following are also under the Headquarters Staff :—

1. The Committee of the Headquarters Staff.—

President : The Chief of the Headquarters Staff.

Members : (a) The 5 Generals in charge of Departments ;

(b) the Director of the Nicolas General Staff Academy ;

(c) 10 Generals (the Chief of the Headquarters Staff can call in officers as additional temporary members to the meetings).

The Committee considers questions of Army organisation and training of troops, the work for the General Staff and the Military Topographical Department, and the conferring of rewards for work.

2. The Mobilisation Committee.—

President : The Chief of the Headquarters Staff.

12 permanent members.

3. The Committee on transport of troops and stores to deal with matters which necessitate the co-operation of the Admiralty and Communications Department.—

President : Chief of the Headquarters Staff.

Members : 8 Generals, 1 representative of the Admiralty and 2 representatives of the Communications Department.

4. The Committee for internal affairs of the Headquarters Staff.—1 President and 4 members.

5. Nicolas General Staff Academy.

Finally, under the Headquarters Staff are :—

The Corps of General Staff officers, the Corps of Orderlies, whose work corresponds practically to that of the Prussian Feldjäger Corps, Military Topography, the publication of the "Vojennii Sbornik" and "Russkii Invalid" journals.

From the foregoing description of the organisation of the Headquarters Staff it follows that the work of a "Great General Staff," in the German sense, is practically done by the 2nd and 3rd, 6th to 9th and the 19th to 24th sections and the Military Topography Department, while the work done in the 1st, 4th, 5th, 10th to 12th, 15th to 18th (the latter partly in the Military Cabinet), would be done by the Prussian War Office, and that in sections 13 to 17, by the Prussian Military Cabinet.

The Chief of the Headquarters Staff, moreover, has, in addition to the duties of "Chief of the General Staff of the Army" (according to German ideas), a very extensive and influential share in other branches of military administration, the educational establishments and the training of the troops. But he is, nevertheless, a subordinate of the War Minister, and it appears doubtful whether, in case of war, the latter, or the Chief of the Headquarters Staff, or even a third man, might not be chosen to take charge of warlike operations. At the present time the question is solved by the sending of the War Minister to the theatre of war in East Asia as Commander-in-Chief.

On the 1st January, 1904, the establishment of the Headquarters Staff was 147 officers and 275 officials.*

3. THE GENERAL STAFF WITH THE TROOPS.

The General Staff with the troops comprises in peace all officers of the General Staff holding appointments fixed by establishment on the following Staffs and Commands:—

The Administrative Staffs of Military Districts, including the Viceroy's Staff in the Far East (1. Priamur District with the Trans-Baikal, Amur and Coast Districts, Sakhalin Island, 2. Kwantung District): 30 Generals, 98 Field and 79 other Officers.†

Army Corps Staffs: 32 Generals, 32 Field, 60 Officers junior ranks.

* According to the list of General Staff officers of 1st January, 1904.

† The new formations owing to the present war with Japan are not included.

Divisional Staffs : 76 Field, 76 Officers junior ranks.

With 3 Cavalry Brigades : 3 Officers junior ranks.

With 3 independent Cossack Brigades : 3 Field Officers.

With the Rifle Brigades (to the 9th East Siberian inclusive) :
24 Field Officers, 1 Junior Officer.

With the Infantry Brigades 46 to 66, the 1st and 2nd
Turkistan Reserve Brigades, the 1st to 3rd Siberian
Infantry Brigades : Each 1 Field Officer.

With the Don Army : 1 Field, 1 Junior Officer.

With the Staffs of Fortresses : 4 Generals, 27 Field, 8
Junior Officers.

In the Administrative Staffs of Military Districts, the Assistant to the Chief of the District Staff, or (as in the frontier districts Wilna, Warsaw, Kieff, Caucasus, Turkistan, Priamur), the "Quartermaster-General," the Chief of "Military Communications," several officers employed on special work under the General Officer Commanding and in the District Staff, as well as several routine Staff officers and their assistants, belong to the General Staff. The Chief of the District Staff is not, according to the establishment, a General Staff officer.

The duties of his assistants are regulated by the Chief of the District Staff. They consequently vary in character in different districts. According to regulation the assistant has only to do with the special employment of officers of the General Staff and their duties with the troops. The officers specially employed are given particular subjects to work out, such as, for instance, the mobilisation of the forces in the district in question, collecting and compiling information of a topographical or statistical nature, the selection of country for quarters, camps and manœuvres, Staff rides with regimental officers. These officers of the General Staff are attached to Generals during the summer manœuvres. The Routine Staff officers, with their assistants, are the Chiefs of the Sections of the District Staff. The Chiefs of these Sections, which deal with questions of quarters, transport, training and mobilisation, are Field Officers.

In an Army Corps the Chief of the General Staff is either

a Major-General or Colonel of the General Staff. He is immediately under the General Commanding the Army Corps, and reports on all matters which come to the Staff and directs the work of the Staff. He can, by order of the General Commanding, inspect any body of troops belonging to the Army Corps. The readiness for war of the Army Corps is especially his responsibility. He has the rank of a Brigadier-General, but as regards the officers of the Staff, the rank and powers of a Divisional General. One of his Senior Routine Staff officers is an officer of the General Staff. He has besides two officers of the General Staff for projects, schemes, &c.

The Chief of the General Staff of a Division (Infantry or Cavalry) is a Colonel or Lieutenant-Colonel of the General Staff. He is assisted in his duties by two Senior Routine Staff officers, having the two Sections of the Divisional Staff, one for military duties and the other for administrative purposes. One of these must be an officer of the General Staff. The Chief reports directly to the Divisional General, issues his orders and sees that they are carried out.

The General Staff officer with Rifle and Reserve Brigades, and the 4th Turkistan Brigade, is attached for special duties.

On the Staff of the Army of the Don, the Routine Staff officer under the Chief of the Staff and his assistant are officers of the General Staff. The Routine Staff officer has charge of the Mobilisation Section.

The Chief of a Fortress Staff is, as a rule, an officer of the General Staff. The Chief of the Section dealing with military duties, that is to say, the military government of the fortress, its preparation for defence, the strength of the troops, exercises, drills, and manœuvres, and questions affecting the officers of the garrison, is, however, always an officer of the General Staff.

Many officers of the General Staff would, in the event of the Army being placed on a war footing, be appointed to the following :—

The Headquarters of the Commander-in-Chief ; the Army Commands ; and the Military District Administration in the theatre of war

The numbers of General Staff officers with these commands depends on the theatre of war and the existing requirements. The number of General Staff officers with Army Corps and Divisions is generally doubled on a war footing. There is in addition one General Staff officer told off to each Army Corps in the field to be at the disposal of the Chief of the Staff.

It is not laid down by regulation that the Chiefs of the Staffs are to be officers of the General Staff. It is, however, laid down that the Chief of the Divisional Staff is to be a Colonel of the General Staff.

General Staff officers of the Commander-in-Chief's headquarters are for general and special duties. For the latter the Chief of the Staff has one General Officer and two Field Officers of the General Staff at his disposal. The Quartermaster-General, who has charge of strategical operations and the Intelligence Department, has attached to him for every Army placed under the orders of the Commander-in-Chief, three officers of the General Staff for general and special duties. Similarly, two officers of the General Staff are attached to the Railway Section, which undertakes the whole management of the railway system of the theatre of war.

The Quartermaster-General on the Staff of an Army in the field is a General of the General Staff. He has attached to him four Senior Routine Staff officers and their assistants and five officers of the General Staff for special duties. The Senior Routine Staff officers and their assistants carry on the work and duties of the four Sections of the Quartermaster-General's Department, viz., Military Operations, General Staff work, the Intelligence Department and the Topographical Department. One General Staff officer is attached for special duty to the Inspector-General of the Communications of the Army.

Officers of the General Staff with the Staffs of District Commands in the theatre of war are intended mainly for special duties. The Chief of a military district and the head of the civil administration of a district on the lines of communication of an Army would each have one officer of the General Staff. The

District Staff would also have several officers attached to it for similar purposes. Each District Staff would have besides two officers of the General Staff—as Senior Routine Staff officer and assistant—to carry on the ordinary work and duties of the Sections.

In an Army Corps acting independently, the Chief Quartermaster, his two Senior Routine Staff officers, and the two officers attached for special duties, are officers of the General Staff. The duties of the Senior Routine Staff officers correspond to those of the Senior Routine Staff officers of the Quartermaster-General of an Army.

The composition of the Staff of a Division in war undergoes a change in that both Sections of the Divisional Staff may be put in charge of General Staff officers.

4. GENERAL STAFF OFFICERS HOLDING SPECIAL APPOINTMENTS.

On the 1st January, 1904, there were employed :—

In the Cossack Department of the War Office (Mobilisation Section) : 1 General, 2 Field Officers.

In the Department of the I.G. Cavalry : 2 Generals, 2 Field Officers.

In the Cavalry Officer's School : 1 Field Officer as member of the Committee.

In the Officer's Musketry School : 1 Field Officer.

At the Nicolas General Staff Academy : 1 General, 1 Field Officer as Director, 6 Field Officers as Inspecting Officers, 10 Generals, 5 Field Officers as instructors.

At other Military Training Establishments : 10 Major-Generals, 12 Colonels, 20 Lieutenant-Colonels and 8 Captains.

Finally, 19 Field Officers were employed as Railway Line Commissioners (for the transport of troops and stores).

5. APPOINTMENT TO THE GENERAL STAFF.

Appointment to the General Staff can only be obtained by those officers who have passed the Nicolas Staff Academy with

good results. The course lasts two and a-half years and is divided into two classes. The last half-year, called the supplementary course, is devoted to special preparation for duty in the General Staff; only the best are admitted to this, about three-quarters, on the results of the final examination in the second year. The establishment allows of 120 to 140 officers being admitted to the Academy yearly. Other officers are admitted to attend the lectures as supernumeraries.

The course in the Survey Section lasts two years, at the end of which the officers remain half a year in the supplementary course. They are then attached to the Chief Observatory at Poltava for one and a-half years. The whole course consequently lasts four years.

Admission to the survey course is only every other year; the number of students does not exceed seven.

Officers of all arms up to first Lieutenant in the Guard, and to Staff Captain of other Arms, are allowed to enter the Academy, provided they have served at least three years in the rank of officer, and passed the entrance examination. This examination is preceded by a preliminary examination carried out in districts.

After this officers are sent to St. Petersburg, by the end of August at latest, to undergo the entrance examination.

The subjects of examination are tactics, mathematics, artillery and small arms, fortification, the elements of military administration, topographical drawing, political history and geography and the Russian, French and German languages.

The course of instruction begins in October. The following are the principal subjects taught:—Military history, tactics, strategy, military administration, military statistics, geodesy and map-making, surveying and drawing. The special subjects are artillery, military engineering, political history, physical geography, and the Russian and foreign languages. Instruction is also given in riding. In the summer the officers do practical military sketching and the solution of tactical problems on the ground.

An exit or final examination takes place in the month of

August, September or October. According to the result, those passing out are divided into three categories. Those in the first and second categories are given a decoration to be worn on the breast, but those of the first category receive as well a gold or silver medal of various sizes.

Officers who have successfully passed the supplementary course are taken on the list of the General Staff. They first of all return to regimental duty for two years, and are then appointed to the General Staff as vacancies occur. An officer who is noted as unsuccessful at the end of the supplementary course, returns to regimental duty without any prospect of special employment.

The surveyors are always posted to the General Staff at once at the conclusion of their four years' course.

The further promotion of General Staff officers, as well as their periodical return to regimental duty, is regulated by special orders on the subject.

CHAPTER VI.

THE GENERAL STAFF OF THE FRENCH ARMY.

IN the year 1790, before the commencement of the wars of the Revolution, by a decree of the National Assembly, a General Staff was formed in the French Army for the first time. It consisted of "Adjutants Généraux" and "Aides-de-camp" of the rank of Field Officers or Captains. The General Staff was not a separate corps of officers, as the individual officers belonging to it were always obliged to return to regimental duty before promotion to the next higher rank.

In the time of Napoleon I there were General Staffs at the headquarters of the Commander-in-Chief, and also with the different armies, which, however, were not organised on any fixed lines, but according to the requirements of the Emperor and Army Commanders at the moment. General Berthier's rôle as "Major-Général" of the Army is well known. It only corresponded to the position of Chief of the General Staff of the Army from a German point of view, in so far that Berthier was responsible for the drawing up of the orders of his imperial master. He was not consulted as to the strategy to be adopted.

The appearance of the Corsican genius precluded the introduction of a regularly organised General Staff. It was not till 6th May, 1818, that by royal decree a regular General Staff Corps was formed. Appointment to the General Staff was at that time through a special General Staff School (*école d'application d'état-major*), into which 25 officers were admitted each year.

At the end of a two years' residence at this school there was an examination, on the results of which a certain number of officers were appointed to the General Staff, and remained in it continuously till they were promoted to the rank of General. Officers of the General Staff were promoted more rapidly, and they

were employed as General Staff with troops, in the War Office, in the higher posts of the "Routine Staff," as instructors and as Military Attachés. According to German ideas there was no "Great General Staff" any more than there was an independent Chief of the General Staff of the Army. Their place was filled by the War Office and the War Minister.

Although the want of this organisation was distinctly recognised as a result of the 1870-71 war, it was not till the year 1880 that a thorough reorganisation of the General Staff was introduced.

The differences of opinion at the time were principally as to whether the General Staff was to be as formerly a "*corps fermé*," that is to say, a permanent corps of officers, independent of the rest of the Army, or whether it was to be a "*service ouvert*," consisting of officers who would be employed on General Staff duties for a time and then returning to regimental duty. It was decided in favour of the principles which had existed at the time of the Revolution, and the General Staff was turned into a "*service ouvert*."

The most important points of the law for the reorganisation, dated 20th March, 1880, are, taking into account the changes which had taken place meanwhile, the following :—

The General Staff consists of officers of all arms who have qualified for the General Staff (*brevet d'état-major*) and who are employed for a time on the General Staff, and of the necessary "Administrative Officers" (registrars) and clerks. The qualification is obtained by passing the final examination at the conclusion of the two years' course at the Staff College (*école supérieure de guerre*). Captains and Field Officers can also qualify without passing through the Staff College by passing a special examination. As a rule all the students at the Staff College qualify for General Staff. At the conclusion of the Staff College course, the officer is tested by being attached for two years for duty to the General Staff with troops, and according to the result of this he is appointed to the General Staff or returns to regimental duty.

The officers who are appointed to the General Staff remain in and wear the uniform of their arm, with certain restrictions

(embroidery on the collar, aiguillettes, arm bands), and are placed *hors cadre* (seconded in English, or somewhat the same as *à la suite* in Germany). They can only be promoted to a higher rank when they have previously completed two years' regimental duty in their present rank. The maximum number of General Staff officers was fixed by law at: 30 Colonels, 40 Lieutenant-Colonels, 170 Majors, 400 Captains, a total of 640 officers, who, however, are not all employed in proper General Staff duty. In addition there are the officers of the Survey Department and 240 "Administrative Officers" (registrars). According to the Army List for 1903 there are at present actually belonging to the General Staff:—

18 Colonels, 48 Lieutenant-Colonels, 153 Majors, 165 Captains.

At the head stands the Chief of the General Staff of the Army (*chef d'état-major général de l'Armée*), who is placed under the Minister of War. He is responsible for the work and training of the officers of the General Staff. Formerly his appointment was a parliamentary one, so that on a change of War Minister he also had to resign his appointment. The result was that from the time that the Great General Staff was formed, from 1874 to 1888, that is in 14 years, there were 12 chiefs at the head of the General Staff. This frequent changing was very bad for the continuity of the work of the General Staff, especially as regards preparations for war. Consequently, in 1890, de Freycinet, the Civil War Minister at the time, a very sensible man, succeeded in making the Chief of the General Staff politically independent of the Minister of War.

The position of the Chief of the General Staff in case of war has given rise to some lively discussions in recent years. Formerly he was destined to act as Chief of the Staff to the Commander-in-Chief (*Generalissimus*). The term "Generalissimus" is generally, though incorrectly, used in France to designate the commander of the principal group of armies destined for action against Germany.

The question arose as to who was to take the supreme command

of all the forces of France in war (corresponding to the German "Great Headquarters"), a question which was answered by the War Minister at the time to the effect that the Government, that is, in other words, the War Minister, would take the supreme command. On these grounds it was not considered advisable to rob the War Minister of his principal adviser in time of war, and it was now arranged that on mobilisation the Chief of the General Staff of the Army would remain at the side of the War Minister, while a General who had been previously selected during peace time, would go as Chief of the Staff to the so-called "Generalissimus."

The Great General Staff, immediately under the Chief of the General Staff, is divided into the following sections :—

Section 1. Organisation and preparation of the Army for war, distribution and strength ;

Section 2. Organisation and tactics of foreign armies, study of foreign theatres of war, military missions abroad ;

Section 3. Military operations and general training of the Army ;

Section 4. Railways and lines of communication, transport of troops ;

Historical Section ;

African Section : Deals with the affairs of Algeria and Tunis ;
Survey.

These sections are each under one of the three "sub-chiefs."

According to the Army List for 1903 the total number of officers on the Great General Staff, including the officers attached for duty, is 142.

The General Staff with troops, apart from the Routine Staff officers (*Officiers d'ordonnance*) consists of :—

With the Military Government of Paris : 2 Colonels or Lieutenant-Colonels, 3 Majors, 5 Captains ;

With the Military Government of Lyons : 2 Colonels or Lieutenant-Colonels, 3 Majors, 4 Captains ;

With an Army Corps : 2 Colonels or Lieutenant-Colonels,
2 or 3 Majors, 2 or 3 Captains ;

With an Infantry or Cavalry Division : 1 Major, 1 Captain.

The Chief of the General Staff with the Government of Paris or with a Frontier Army Corps may be a Brigadier-General instead of a Colonel.

The Senior General Staff officer with an Army Corps is the Chief of the General Staff, and the next senior is Sub-Chief. In the same way, the Field Officer of the General Staff with a Division is Chief of the Divisional Staff. As in Germany, there is only Routine Staff and no General Staff with a Brigade.

The duties of the General Staff of an Army Corps are arranged in the following manner : The post of Chief of the General Staff is the same as in Germany. The Sub-Chief assists him and acts for him when absent. The two Field Officers are employed as chiefs of the two sections, between which the work is divided. Section 1 deals with : General correspondence, training, operations, drill and manœuvres, affairs of officers, administration of the law, administrative departments, survey, statistics. Section 2 (territorial section) deals with : Conscription, organisation, preparation for war, reserve and territorial army, Artillery and Engineer establishments, military works, fortifications. The work is divided in a similar way in General Staffs of divisions. The rules as to correspondence, records and returns are all definitely laid down.

General Staffs for the Headquarters of the Commander-in-Chief and the Commanders of Armies and General Staffs to act with the individual Army Corps are only formed for war. The General Staff of an Army Corps on a war footing consists of a Colonel or Lieutenant-Colonel as Chief, a Lieutenant-Colonel or Major as Sub-Chief, one Field Officer and five Captains or Lieutenants. The General Staff of a Division consists of a Lieutenant-Colonel or Major as Chief and two Captains or Lieutenants. The duties of a General Staff in war are divided into external duties and office duties. In the instructions regarding external duties, it is worth noticing that a General Staff officer who is sent on any special

mission is authorised to demand any assistance from Commanders of troops in the way of information or the provision of escorts and horses. If several officers are sent on one mission, the General Staff officer takes command of other officers of his own rank.

The office work of the General Staff of an Army in war time is divided in three sections, which deal with :—

1. Maintenance of efficiency ;
2. Intelligence and political ;
3. Operations.

With an Army Corps or Division the work of 2 and 3 is in one section. Instructions as to correspondence, petitions, reports, information, issue of orders, diaries, arrangement of the office and records, are all set forth in detail.

The training of General Staff officers in peace time is regulated by a special decree of the War Minister. General Staff officers have to deal with big questions on professional subjects as winter work, to work out tactical problems, carry out reconnaissances and to take part in war games, tactical and General Staff rides. These are divided as in Germany, into Army and Corps General Staff rides. Officers have in addition to attend manoeuvres and practice camps.

There is a general complaint that there is too much office work required of General Staff officers in France, and that consequently they are kept away from their proper duties, although the individual Staffs have a higher establishment of officers than is the case in Germany.

CHAPTER VII.

THE GENERAL STAFF OF THE BRITISH ARMY.

The English Army is in every respect so entirely different from any of the great European armies, not only as regards the system of recruiting of the Army, but also as regards administration and the duties of the higher military authorities, that it must not appear surprising if the character, duties and business of the General Staff belonging to it are totally different from that of any other Army.

The "Staff" in the English Army is looked upon rather as consisting of the General officers holding commands and the Staffs attached to them in peace or war; moreover, a great part of the duties connected with Army administration is transferred to the General Staff.

The reason for this is to be found in the organisation of the British War Office. The British Army is a parliamentary Army, and the Constitution takes care that the reputation of the Cabinet is not affected by the influence of a professional officer.

At the head of the War Office is the Secretary of State for War, under whom was formerly the Commander-in-Chief. The former is a political personage, a member of, and responsible to, Parliament, whose fate is dependent on that of the Cabinet; the latter, who had no seat in the House of Commons, was only responsible to the Sovereign.

The War Office formerly consisted of :—

- I. The Civil Department, under the Financial Secretary;
- II. The Military Department, under the Commander-in-Chief appointed by the Crown.

There are two Under Secretaries of State directly under the Civil War Minister : (a) The Parliamentary Under Secretary of State, a politician who changes with the War Minister and supports him in Parliament ; (b) the Permanent Under Secretary of State, who as a professional official is independent of any change of Ministry, and has no seat in Parliament. Immediately under the War Minister and controlled by the Parliamentary Under Secretary is the Central Department, divided in four sections. By it is carried on the business of the Department with other Departments, other authorities and Parliament.

The Military Department under the Commander-in-Chief was formerly divided into five principal and two subordinate departments :—

1. The Department of the Commander-in-Chief.—As the Commander-in-Chief formerly had command of all the troops at home and abroad, Army Orders were issued, and inspections were arranged from this office. The Commander-in-Chief was the principal adviser of the Minister of War in military matters. He also was responsible for the general distribution of the Army, mobilisation, plans of operations, intelligence, and personal affairs of officers. His deputy was the senior officer of the Military Department. The sphere of his duties included the business of : (a) Adjutant-General, who dealt with discipline, training, education, and recruiting, in eight sections ; (b) Director-General of Mobilisation and Military Intelligence, who collected all information of value for the defence of the country, and details of organisation of foreign armies ; (c) Military Secretary, corresponding somewhat to the German Military Cabinet, which deals with the appointment and promotion of officers (but only up to Field Officer*) and other personal affairs of officers.

2. Quartermaster-General's Department.—Supply, quartering, remounts and transport of troops by land and sea.

3. Department of the Director-General of Fortifications.—Fortifications.

* The selection and promotion board formerly dealt with promotions in the higher ranks.

4. Department of the Director-General of Ordnance.—Equipment and clothing, technical establishments.

5. Department of the Director-General of Army Medical services.—Medical Section.

6. Department dealing with religious matters.

7. Veterinary Department dealing with supply of horses

There is not yet, properly speaking, a Great General Staff in the British Army. The proposed changes in the War Office in this respect will be referred to later on. At the present time a great part of the work which falls to the Great General Staff in Germany, is, as would be imagined from the above description of the organisation of the English War Office, done there and also in certain of the five standing Committees (*e.g.*, in the "Army Railway Council" for the transport of troops in war, and in the "Defence Committee" for the consideration of fundamental questions for the land and sea forces).

The General Staff officers do not form a special corps. The "Staff" consists in the first place of officers who have been specially trained at the "Staff College" (Camberley, near Aldershot), who in peace are sent to assist at Headquarters, with the General and Divisional Commands, Colonial Commands, and Inspector-General of Cavalry, and in war to corps Divisional and Brigade Commands with troops in the field. These officers form the real "General Staff." In addition, officers on the "Personal Staff" belong to the "Staff," corresponding to the German higher "Adjutantur."

Officers considered suitable for the General Staff must go through the two years' course at the "Staff College," or pass the final examination which is prescribed for appointment under exceptional circumstances. To be eligible for the entrance examination the competitor must have five years' service (exclusive of long leave). Officers who have distinguished themselves on active service are exempted from the examination. As a rule an appointment on the General Staff is for five years. General Staff officers gain no advantages as regards promotion, but have more opportunity of distinguishing themselves on active

service, and, consequently, of being promoted, than regimental officers.

General Staff officers are classified in five grades :

- (a) Adjutant or Quartermaster-General — General (from Major-General upwards) ;
- (b) Deputy Adjutant-General—Colonel or Major-General ;
- (c) Assistant Adjutant-General — Lieutenant-Colonel or Colonel ;
- (d) Deputy Assistant Adjutant — Captain to Lieutenant-Colonel ;
- (e) Staff Captains—Captains.

General Staff officers doing duty in the Quartermaster-General Branch (at the War Office, with the higher commands and Presidency Commands in India) of grades (b) to (d) are called correspondingly : Deputy Quartermaster-General, &c. The officers in the "Mobilisation and Military Intelligence Division" of the War Office also have the title "Quartermaster," &c., although they are not actually engaged in Quartermaster-General's work.

There are one to three officers on the "Personal Staff" of Generals, according to their rank, who are called "Military Secretary," "Assistant Military Secretary" or "Aide-de-camp." They are only allotted to the highest appointments and deal with confidential service matters (personnel). The "Aides-de-camp" are selected by the Generals with whom they serve, and are chosen rather from personal than service reasons.

Officers of the General Staff proper wear a special uniform, and those on the Personal Staff a similar uniform.

The work of the "Great General Staff" is done, as already stated, partly by the War Office and partly by standing committees.

With the General Staff with troops, the Senior General Staff officer of those appointed to a command is called Chief of the General Staff ("Chief Staff officer"). The work is carried out as follows :—

Section A deals with discipline, interior economy, training, musketry, signalling, schools ;

Section B : Recruiting, transport of troops, distribution and quartering of troops, barracks and camps ;

Section C : Artillery matters ;

Section D : Engineer matters ;

Section E : Equipment, &c.

The employment of General Staff officers in war is similar to that in the German Army. With Brigades the work of sections A and B is done by the "Brigade-Major," the only General Staff officer with a Brigade in war.

At the present time the British Army is undergoing reorganisation, which touches, in the first place, the War Office, and with it the General Staff ("Intelligence Division").

The Committee entrusted with the preparations for this change finds the first necessity, in order to improve the Army, to be the reconstitution of the Defence Committee and of the General Staff. The former, following the parliamentary traditions of the country, is to be directly and exclusively under the Prime Minister. This Committee is to have, in addition to the former members, who were frequently changing, and much occupied with other duties, a permanent nucleus to deal with defence questions. These questions will include, in accordance with the composition of the British Empire, not only the troops of the Mother country, but also the Navy, India and the Colonies.

Till now, the Committee consisted of the President, namely, the Parliamentary Under Secretary to the War Minister, and the following members : The First Sea Lord, the Director of Naval Ordnance, the Director of Naval Intelligence, the Adjutant-General, the Inspector-General of Fortifications, the Director-General of Ordnance, the Director-General of the Mobilisation and Intelligence Division and two Secretaries.

In addition to this Committee there was a Colonial Defence Committee. Both these will now be amalgamated in the Defence Committee.

The new members joining will be : a permanent secretary, whose appointment will originally only be for five years, but which can be prolonged at pleasure. Under him will be 2 naval officers

selected by the Admiralty, 2 military officers selected by the War Office, 2 Indian officers, selected by the Viceroy, 1 or more representatives of the Colonies.

The seniority of these officers is immaterial; their appointment would be for two years at the most, when they could return for at least one year to regimental duty. They can then come back to the War Office again later.

The duties of the new "Defence Committee," as proposed, are as follows:—

- (a) The consideration of all questions of the defence of the Empire as affecting the Army, Navy, India and the Colonies;
- (b) The collecting of the necessary information from the Admiralty, War Office, India Office, Colonial Office, and other departments of State;
- (c) The preparation of all documents relating to the defence of the country for the information of the Prime Minister;
- (d) Proposals in regard to defence questions, which involve several departments of State;
- (e) Furnishing reports to the Cabinet.

The above-mentioned Committee likewise proposed a transformation of the War Office, which was in great part carried out at once by the Government. The spheres of work which had been under the Commander-in-Chief are assigned directly to the War Minister.

The constitution of the War Office was modelled on the Admiralty "Board." The new Army Council, at the head of which is the War Minister, is composed as follows:—

1. The War Minister (civilian);
2. First military member: Preparations for war;
3. Second military member: Recruiting, pay, discipline, &c.;
4. Third military member: Supply, clothing, remounts, &c.;
5. Fourth military member: Equipment, fortifications, &c.;
6. Civil member for military buildings and religious matters;
7. Financial Secretary for financial matters.

There is in addition a Secretary of the "War Office," immediately under the War Minister, for the carrying on of business and for parliamentary work. The "War Office" is only an administrative and not a commanding authority.

It is further intended to form a "General Staff," such as exists in all armies organised on modern lines. In England alone, much to the disadvantage of her Army, there has so far been no General Staff.

While questions relating to the defence of the country by the Army and Navy jointly will be dealt with by the Defence Committee, all preparations for war on land are to be carried out by the General Staff, which is under the First Military Member of the Army Council. The General Staff is to remain in effective touch with the Army, no officer is to serve on the General Staff for longer than four years consecutively. The supply of General Staff officers is to be mainly from the Staff College.

The organisation of the General Staff is arranged somewhat as follows :—

CHIEF OF THE GENERAL STAFF OF THE ARMY.

Director of Military Operations :—

Information as to the British forces, their distribution, plans of attack and defence for wars out of the United Kingdom.

Intelligence.

Mapping.

Director of Staff Duties :—

Higher military education.

Publication of regulations as to tactical training, military history, library.

Director of Military Training :—

Home defence.

Manœuvres.

The abolition of the post of Commander-in-Chief under the War Minister was urgently necessary. The attempt to combine in a measure administration and command in the person of the

Commander-in-Chief failed absolutely. With the composition and extent of the British Empire it seems impossible that one man could properly fill such a position.

The former Commander-in-Chief was at the same time the Inspector-General of the troops. This post has now been taken by an Inspector-General who is outside of and independent of the War Office. Under him are a number of inspectors. The Inspector-General is to be the "eyes and ears" of the Army Council and furnish reports yearly to that authority. Proposals for the promotion of officers, from Captain upwards, are to emanate from him (through the "Selection Board").

Finally, it is intended, in accordance with a demand which has been made many times, to increase the powers of the Commanders of troops, in order to arrive at a greater measure of decentralisation. Seven administrative districts are to be formed under Major-Generals (five in England, one in Scotland, one in Ireland). Each of these authorities will take over the administrative work of their district, which formerly was altogether in the hands of the War Office. The staff of these seven administrative chiefs has nothing to do with the "General Staff." The Brigade Commands are Commands pure and simple, and are concerned with the training and leading of the troops. Administration and command are united in the "General Officers Commanding in Chief," of whom there are to be five: 1. for the two Army Corps in Aldershot and Salisbury, the troops of which are always in a state of readiness; 2, for the Northern Command; 3, for the Eastern Command; 4, for the Western Command; 5, for Ireland.

In peace time no other Army Corps will exist beyond the two mentioned.

CHAPTER VIII.

GENERAL STAFF OF THE UNITED STATES ARMY.

TILL the end of the last century the United States of North America looked on their geographical position and the building of a strong Navy as the best protection against Powers beyond the sea, and were accustomed to consider a standing Army as a continual threat to the Republic; but the Spanish-American War brought about a complete change in their ideas. The mobilisation of 1898 revealed so many weak spots in their organisation as it then stood, that lasting remedies were applied by the reorganisation law of 1901 and the Militia Law of 1903. By the Law of 14th February, 1903, a General Staff has been given to the Army.

Formerly the Commander-in-Chief was responsible for the preparedness of the Army, without the power of putting into force his ideas on Army organisation, armament, &c., as he was dependent on the Secretary for War (War Minister) in all important questions. The post of Commander-in-Chief has consequently been abolished, and his duties, in a very extended form, have been transferred to the Chief of the General Staff.

The latter is immediately subordinate to the President of the Republic, although, to a less extent than formerly, still dependent on the War Minister.

Speaking generally, the duties of the General Staff are very comprehensive, and it seems doubtful whether the limited number of General Staff officers will suffice for the work, although the Army is not large. With the exception of real General Staff business, moreover, the sphere of the General Staff is advisory generally rather than executive.

In contrast to this the Chief of the General Staff has been given

the very important right of supervising the service of the troops as regards command and discipline, likewise of inspecting all units. He and all other officers on the General Staff are to return as a rule to regimental duty after four years' staff service. To avoid friction between the former chief and his younger successor, it has been decided that all important orders and instructions are to be issued in the name of the President or of the War Minister.

Further, the Chief of the General Staff of the Army is to occupy a peculiarly confidential position in his relations with the President of the Republic and the War Minister, in order to exclude as far as possible any dissensions between these three persons. This might, by a suitable selection, be conceivable, but, as a further consequence of this requirement, the Chief of the General Staff would have to resign his post when the President quitted office.

In war, the Chief of the General Staff is to become the Commander-in-Chief of all the land forces. The General Staff is divided into the General Staff Corps at Washington and the General Staff with the troops, with the five Divisions which exist in peace.

It consists of 1 Chief, 3 Generals (exclusive of the permanently appointed General of the Artillery Corps), 4 Colonels, 6 Lieutenant-Colonels, 12 Majors and 20 Captains or First Lieutenants. In all 46 officers.

These officers, except the three Generals, who will be nominated by the President of the Republic, will be selected from some 500 candidates by a Committee of seven senior officers. The appointment of officers to the General Staff is for four years. The officers who are relieved during or at the termination of this period return to their former arm, and cannot be appointed to the General Staff again till they have completed two years' regimental duty.

Hereby the former custom, according to which officers on staffs remained permanently in their appointments, is done away with. In order to avoid the simultaneous quitting of the General Staff at the end of this four years by all the officers now employed during this transition period, some officers will return to regimental duty after two and three years, and their places will be filled by suitable selected officers, subject to the approval

of the Chief of the General Staff. They do not appear to be required to pass any special examination. Service in the General Staff Corps (corresponding to the German "Great General Staff") is for the time being organised as follows :—

The Chief (the only Lieutenant-General in the Army) is at the head ; under him are 4 Generals (Major-Generals or Brigadiers), of whom 2 are the Chief's assistants (" Chief Quartermasters "), 1 is Director of the War College (Staff College), and 1 is General of the Artillery Corps. In addition there is 1 First Lieutenant immediately under the Chief as secretary.

The General Staff in Washington is divided into three departments :—

Department I. (1 Colonel) :—

Section 1. (1 Major, 3 Captains) :

- a.* Organisation, training, armament and equipment.
- b.* Preparation of the Army for war and operations in war.
- c.* Large manoeuvres in peace.

Section 2. (1 Lieutenant-Colonel, 1 Major, 4 Captains) :

- a.* Discipline, regulations, orders, examinations for appointment and promotion of officers (with the exception of the scientific branches).
- b.* War College (Staff College), military schools, training.

Section 3. (1 Lieutenant-Colonel, 2 Captains) :

- a.* Transport of troops by land and water, signalling balloons.
- b.* Barracks, camps, magazines, sanitary measures.
- c.* Supply in peace and war.

Department II. (1 Major) :—

- a.* (1 Major and 8 Captains) : Intelligence, information as to organisation of foreign armies, military history, library, maps.
- b.* Military attachés.

Department III. (1 Lieutenant-Colonel as Chief, 1 Lieutenant-Colonel and 3 Majors) :—

- Section 1. Information as to possible theatres of war, co-operation of Army and Navy.

Section 2 :

- a.* Technical troops (their organisation, armament, equipments, &c.).
- b.* Regulations, &c., for technical troops, examinations of officers for technical troops, technical schools.
- c.* Ordnance and fortification.

Section 3 :

- a.* Permanent Fortifications, so far as they have to be considered in choice of manœuvre grounds, electric and other designs.
- b.* Mining and Coast defence.
- c.* Joint manœuvres of Army and Navy.

The duties of the General Staff with troops in war and peace are modelled on the German General Staff duties as they are carried out with Army Corps Commands.

There are in peace time two General Staff officers with each of the five Divisions, the senior acting as "Chief" and the other as his assistant. There are in addition Routine Staff Officers.

CHAPTER IX.

GENERAL STAFF OF THE RUMANIAN ARMY.

It is especially worthy of notice that the German prince who ascended the throne of Rumania in the year 1866, at once turned his attention to the improvement of the Army, and set to work to develop the existing foundations of a General Staff. The brilliant achievements of the young Army in the Russo-Turkish War in 1877 and 1878 give convincing proof of how far his efforts had been crowned by success. As far back as 12th September, 1859, the foundation was laid for the Army of the United Principalities of Moldavia and Wallachia. The work entrusted to it included topographical and statistical labours, reconnaissances, manœuvres, preparations for war, forming of camps, tactical and strategical problems, questions as to fortification, military buildings, arms and ammunition; and finally the forming of committees which had to express their opinion as to proposed improvements in the Army.

In the course of the next few years the General Staff underwent many changes, affecting both its constitution and the number and selection of the officers appointed to it.

In the year 1866 the General Staff was considerably increased, and for the first time the General Staff serving with the troops was separated from the Great General Staff. It was ordered that appointment to the General Staff would be made from:

1. Officers who had passed the French General Staff School;
2. Officers who had passed a special examination. It was not

till the Army reorganisation introduced by the law of 1866 had been carried out that it was possible to give to the General Staff a settled constitution and formation, and to lay down the objects of the Great General Staff on the one hand and of the General Staff with the troops on the other.

The object of the General Staff was stated to be the training of officers for higher commands. A purely scientific training was the main point, as there was no opportunity of practical exercise in troop leading. The General Staff was filled chiefly by officers of the scientific branches. On 3rd February, 1870, appeared regulations for duty on the General Staff and for the officers of the General Staff Corps. These regulations laid down the duty of the General Staff with the higher commands. The General Staff itself was divided into four sections, of which the fourth one was to be disbanded in the event of mobilisation; the duty in these four sections was classified as follows :—

- I. General Staff work : Marches, movements of troops, manœuvres, instructions for service, reconnaissances, &c.
- II. Routine Staff work : Promotions, furloughs, punishments, reserves.
- III. Administration : Ammunition, equipment, military courts, marriages, &c.
- IV. War dépôt or survey.

By Order No. 695 of 1871 a " permanent advisory Committee " (*Comité Consultatif permanent*) was formed at the War Office, which consisted of six sections. One of these sections belonged to the General Staff, and dealt with the following matters : Organisation in peace and war, discipline, training and uniform of the General Staff. The Committee also decided as to the yearly work of the officers of the General Staff.

Admission to the General Staff Corps of officers of all arms was legislated for by Order No. 1824 of the year 1873. Those officers who were recommended by their Commanding Officers as suitable for the General Staff were, after passing an examina-

tion, to be trained for the General Staff. Officers who passed the examination were first of all sent to the arms to which they did not belong. They subsequently worked for six months in Section VI (War Dépôt) of the General Staff. They were then transferred to the General Staff.

The same Order laid down that officers of the General Staff during the time they were working in the different sections had to do duty from time to time with their unit. General Staff officers returning to regimental duty continued to wear General Staff uniform, with a small variation (small aiguillettes). (Order 1717 of 1875.)

These regulations remained unchanged till the year 1882. In November, 1883, there was a reorganisation of the Great General Staff. It was now organised as follows :—

Section I : Organisation, preparation for war, concentration, preparation of lines of communication for the Army for different theatres of war, geography and topography of the country.

Section II : Preparation and organisation of resources, movement of troops, information as to military forces of foreign countries, reconnaissances.

Section III : Carrying out and correction of the survey of the country.

The two first sections each consisted of 1 Field Officer and 2 Captains ; the third of 1 Colonel, 1 Lieutenant-Colonel, 1 Major and 4 Captains.

The interior organisation of the General Staff was modelled on that of the French General Staff. The training of the officers was still chiefly technical and scientific. They almost all belonged to the scientific branches. This was due to the order that General Staff officers must have passed through either an Artillery or Engineer School or a Staff College.

To be a General Staff officer a so-called "Brevet" was necessary. The General Staff officer was in reality seldom in

actual connection with the troops, although it was laid down that "breveted" officers up to Lieutenant-Colonel inclusive were not to remain longer than four years consecutively in General Staff employ.

The Order of 17th January, 1884, which followed the law of 1883, contained a more detailed classification of the work to be performed by the individual sections. The authority and duties of the chief of the General Staff were also laid down. In addition to the control and training of the General Staff and the direction of the work of the General Staff, he was entrusted with military training and education. At the same time the Chief of the General Staff was in everything subordinate to the War Office; consequently a change in the control of the War Office necessitated a change at the same time in the appointment of the Chief of the General Staff.

In the War Office itself there was also a General Staff section which dealt with Army organisation and establishments, recruiting, preparation for war, concentration, operations, reconnaissances, big inspections, standing of breveted General Staff officers, political and international questions, lines of communications, railways, post and telegraph. This General Staff section had the same authority as the corresponding offices of the Great General Staff. In the year 1891 new regulations were issued for General Staff duties. In accordance with these the General Staff was placed directly under the War Office.

The following was the distribution of duties :—

Section I.—Office 1: General Staff officers, officers abroad on duty, education and training. Office 2: Army organisation and preparation for war. Office 3: Operations, strategical deployment, &c., manœuvres, training.

Section II.—Office 1: Intelligence. Office 2: Lines of Communication and transport of troops.

Section III.—Office 1: Topography. Office 2: Geodesy and astronomy. Office 3: Mapping. Office 4: Records.

A new Order in 1895 added to what was required of officers to gain admission to the General Staff. The brevet as General Staff officer was only to be bestowed on officers of the rank of Field Officer and upwards, and only under the following conditions: (1) Successful course at the Rumanian Staff College or a foreign General Staff school, and a corresponding certificate of capability; (2) a similar certificate after being attached for one year to the Great General Staff, and also after being attached for a year to another arm; (3) the officer having passed the examination for promotion to the rank of Major, must still be on the promotion list; (4) a special examination.

The Order of 1883 laying down that officers who had been employed for four years consecutively on the General Staff must return to regimental duty, was cancelled by the law of 1893. At the same time it was laid down that "breveted" officers who were promoted when with their unit could not return to the General Staff till they had completed one year's regimental duty in their new rank. Finally, the former Section III of the Great General Staff was separated, and received the name of the "Geographical Institution."

In the year 1901 the above changes were carried a step further; the routine Staff and registration office of the Great General Staff were placed under Office 1. Further orders caused no material alterations.

The Rumanian General Staff is in accordance with above organised as follows at the present time :—

Office 1 : Routine Staff and registration, personnel, military schools, examination boards, recruiting, statistical questions, frontiers, reserve officers, library.

Section I.—Office 2, Sub-office A : Organisation, distribution in peace. Sub-office B : Preparation for war. Office 3 : Operations, concentration, manoeuvres, Staff rides, training, calling up of reserves, military history.

Section II.—Office 4, Sub-office A : Transport of troops; Sub-office B : Lines of Communication of the Army, post and telegraph. Office 5 : Intelligence.

The present establishment of officers who wear the uniform of the Great General Staff is as follows: 11 Colonels, 10 Lieutenant-Colonels, 15 Majors. The officers of the General Staff doing duty with troops have generally the same work as falls to General Staff officers on Army Corps and Divisional Staffs in Germany. The distribution of General Staff officers to these commands is similar to what it is in Germany, but in Rumania all General Staff officers with troops do not wear the uniform of the General Staff, but many wear that of their former arm.

CHAPTER X.

GENERAL STAFF OF THE JAPANESE ARMY.

THE Japanese nation, which but a few decades back, after much internal conflict, decided to adopt European organisations, has, in a surprisingly short time, stepped into the ranks of the great land and sea powers.

The Japanese Army possesses in its General Staff an organisation which in its main features is modelled on the German General Staff. Of course it was not German officers who were the first instructors of the Japanese, as French officers had been appointed in 1866 as military instructors in the Mikado's dominions. Dating from that time the Japanese have continued to wear a similar uniform to the French. The fundamental training of the Japanese officers was, however, carried out mainly by Prussian General Staff officers.*

The excellent work in the Chino-Japanese war, and the careful preparation for the present war with Russia, bear testimony to the scientific work and sound procedure of the Japanese General Staff.

The Chief of the General Staff is, as in Germany, directly under the Emperor, the same as the War Minister and the Inspector-General of Education and Training. Divisional Commanders† report direct to the Mikado on the training of troops, while in administrative matters they are under the War Minister.

The General Staff numbers some 150 officers, and is divided into :—

1. The Great General Staff.
2. The General Staff with the troops.

* Meckel and v. Wildenbruch.

† The Japanese Army in peace has only divisions.

At its head is the Chief of the General Staff of the Army, who has a vice-chief at his side.

The Great General Staff is composed of :—

The General Section :

Section 1.—For home defence.

Section 2.—For organisation and preparation of the Japanese Army for war.

Section 3.—For information as to foreign armies and intelligence.

Section 4.—For communications and transport of troops.

Section 5.—For military history.

In addition it supervises :—

(a) The survey, and the trigonometrical, topographical and cartographical section.

(b) The Staff College, to which is admitted yearly from 150 to 160 Lieutenants.

(c) The Military Attachés.

As General Staff with troops there are three General Staff officers allotted to each Division : 1 Colonel, as Chief ; 1 Major, and 1 Captain.

The General Staff officers return to regimental duty from time to time with their own arm. Before each step to promotion they must have done at least one year's regimental duty.

PART II.

ARMY MANŒUVRES.

CHAPTER I.

HISTORICAL DEVELOPMENT.

IT is to be supposed that the creation of standing Armies, or the idea of always maintaining a military force trained and prepared for war, immediately led to the system of peace manœuvres, which, beginning with the training of the individual soldier, and afterwards with the exercise of small bodies of men (tactical units), has eventually led to the present system of autumn manœuvres, or the practice of large forces in marching and fighting. It would be a mistake to assume that the avowed object of all manœuvres has been exclusively, from the very beginning, to exercise the military efficiency of the troops in question. There may have been other reasons, one of which was possibly that, with long service, it was considered necessary to provide a certain amount of employment for officers and men. But one thing is certain, and that is, that great Generals have at all times taken pains to train their Armies during peace for war ; and that, on the other hand, disaster in war has invariably been the consequence of neglect of military training in peace.

The constant increase in the numbers of Armies has augmented the difficulty of handling them, and has rendered it necessary to introduce Army manœuvres, in which very large bodies of troops have to act in concert. These Army manœuvres are in addition

to the smaller manœuvres carried out among themselves by the troops of a single Army Corps.

It was formerly not the custom to turn out more than two Army Corps for a given scheme of manœuvres. This was sufficient for the instruction of officers in leading troops, up to the rank of General Officer Commanding Army Corps. But not every General Officer Commanding Army Corps is qualified to become a Commander-in-Chief of an Army. A theoretical knowledge of the handling of an Army is not sufficient; theory requires to be supplemented by practical experience, so far as this is attainable in peace time.

Hence we find that the Great Powers have introduced annual Army manœuvres, in which as many as four Army Corps and two Cavalry Divisions—sometimes even more—have been exercised. These manœuvres have been carried out, with occasional intermissions, in the autumn of every year.

In Germany this exercise constitutes the Imperial manœuvres, which are planned and superintended by the Emperor himself, through the Chief of the General Staff (Field Service Regulations, para. 693).

Manœuvres on such a scale are by no means free from serious difficulties, and their execution calls for a very completely organised umpire staff. Both the troops and the civil population are exposed to much discomfort, owing to the crowding together of masses of men in a district. The expense is heavy, and the mounted branches especially lose much time in marching to the place of assembly, which entails an interruption in the normal training of the troops.

But these objections are far outweighed by the resulting advantages. We have already referred to the experience gained by the Senior Generals. And, moreover, all grades of Commanding Officers, as well as the troops themselves, derive great advantage from the march under service conditions to the place of assembly, and from the eight days' "state of war" with all its hardships and fatigues. Much instruction is gained in the feeding and supply of large bodies of troops, and the conveyance of troops by

rail. Experimental equipment and experimental methods are practically tested. In fact, the Imperial manœuvres are useful in the widest sense of the word.

There is now, as compared with former days, an additional reason for increasing the importance of manœuvres in peace, and this arises from the rapidity with which troops can be strategically concentrated, and even taken to the actual battlefield by railway, immediately after being placed on a war footing. There is now no longer the possibility of collecting in camps a large proportion of the troops intended for active operations within the time allowed for concentration, thus giving Generals an opportunity for practice in the handling of large masses of troops before actual hostilities commence.

The history of the gradual development of ideas which has led to the establishment of peace manœuvres in the Prussian Army is very interesting. The zenith of our military successes, both in the present and in the past centuries, may be significantly referred to as immediately following a time when peace manœuvres were considered of the highest importance. Their close connection with actual warfare, and especially the endeavours that were made to assimilate them as far as possible to real war, were the means of providing our Generals with a machine which proved itself equal to any reasonable effort that could be called for, and gave them the most trustworthy instrument on which to base their plans and decisions. On the other hand, the decline of peace manœuvres, and the fact that military training became more and more confined to the unproductive niceties of parade drill in the beginning of the present century, paved the way for our terrible disasters, which could not have been averted at the last moment even with the assistance of the finest generalship.

Frederick William I, a King whose character has been generally unjustly judged from his rough exterior only, and who cemented the bonds that have held Prussia together for more than a century, is, as has been already mentioned, to be considered the founder of the military strength of Prussia. With the able assistance of Prince Leopold of Anhalt Dessau, he laid the

foundation stone of a system of military training going into the minutest details, and based on the strictest discipline the world has ever known, and left his great successor the legacy of an Army which was only wanting in the tactical skill and intellectual training of its Generals to make it perfection itself.

Frederick II. then developed on the manœuvre fields of Potsdam, Spandau and Berlin the Prussian tactics of the last century. The present day has never seen such constant, closely connected and numerous manœuvres as took place from the year 1745 to the year 1756. The manœuvres at Spandau in 1753 lasted twelve days, 49 battalions and 61 squadrons, amounting altogether to 36,000 men, being assembled together for the purpose of taking part in them. The King laid the greatest stress on them, and took immense pains to turn the experiences gained in the first two campaigns in Silesia to account. In spite of his having been always victorious in both wars, he was, nevertheless, fully alive to the wants of his Army. He was quite unsparing in his exactions with regard to the training for the field of his Cavalry and Infantry Regiments, holding the regimental commanders themselves responsible for it. But he undertook himself the test of this, as well as the higher training of his Army for war in large masses, at manœuvres. At these, before the Seven Years' War, no one could be present, not even a Prussian officer, unless on duty. A screen was drawn round the manœuvring ground, hermetically sealing it, so to speak. Well-informed eye witnesses, who were by no means worshippers of the King, have avowed that since arms were first introduced the world had never seen anything more brilliant or more like real war than these manœuvres. The result of all this was shown in the battles of the Seven Years' War, in which, though undertaken almost invariably against superior numbers, victory declared itself with few exceptions for the Prussian arms. The military genius of Frederick the Great certainly does not suffer if we are obliged to admit that, without such troops as had been trained by him for war, he could never have carried out his plans, and that without such an excellent Army the battle of

Leuthen, fought against a threefold superiority in numbers, could not have possibly resulted in a Prussian victory.

Representatives from every Army in Europe were to be seen at Prussian manoeuvres after the Seven Years' War, for after a successful contest had been undertaken and maintained for seven years against nearly the whole of Continental Europe, with apparently permanent results, there appeared no further need of secrecy. There cannot, however, be the slightest doubt that the constant presence of a large number of persons of high rank, fond of display, soon had the effect, though perhaps imperceptibly at first, of changing the original character of these manoeuvres. It is possible that even towards the close of the reign of the Great Frederick too much attention was paid to the precision of *appearance* of the movements of troops in large masses. But it is well known how this fatal tendency was further unfortunately developed in the twenty years that followed his decease. The mathematical precision with which the colours of battalions were required to be dressed is a type of the military manoeuvres of those days, and the efforts of men of the Yorck and Bülow stamp were unable to counteract fallacies of the kind by quietly training their newly formed battalions of Light Infantry in the open order fighting formation on the Johannisburg Heath far away on the other side of the Vistula.

Then came our terrible disasters of the years 1806 and 1807.

The military re-organisation which followed gave full importance to peace manoeuvres. The combination of Infantry and Cavalry in bodies corresponding to our Divisions of the present day,* and the appointment of Inspectors of light troops, both mounted and foot, formed a guarantee that the manoeuvres would be so conducted as to prepare for the co-operation of both arms in war. The exhausted finances of the country, however, could not stand the immediate undertaking of manoeuvres on a large scale, which, moreover, were not at all suited to the times,

* In the place of the Infantry and Cavalry Inspections which existed from 1763 to 1806.

as the new military system of training had to be first of all introduced, entirely replacing the old from its very foundation.

The Royal Order of the 3rd June, 1808 (a preliminary set of Instructions on the training of troops), distinctly laid down that the greatest amount of attention and pains was to be devoted to the instruction of officers and non-commissioned officers in field duties, and of the men in target practice and skirmishing. Moreover, by carrying on manœuvres on a small scale troops were to be trained with a view of giving instruction in the mutual support of the different arms, and the greatest attention was to be paid to this most important subject, hitherto not sufficiently practised. The training of the Artillery remained for the time separate from that of the other arms. But the necessity of not leaving the higher training of the Artillery entirely to itself was so far acknowledged that Prince Augustus of Prussia, who came from the Infantry, and had greatly distinguished himself at the head of his Grenadier Battalion by his attitude before the capitulation of Prenzlau, was appointed Brigadier-General of Artillery, and given at the same time chief command of the Artillery by Royal Order of the 8th August, 1808.*

In the campaigns of 1813-14-15 we find the Prince at the head of a body of troops of all arms ; we thus see the principle established of combining the three arms for the common object.

The twenty-five years of peace which followed the wars of liberation did not upset the experiences so dearly purchased. By Royal Order of the 12th May, 1822, it was laid down that the manœuvres of each Army Corps were to be annually divided into three periods, viz., the four Infantry and four Cavalry Regiments were to be separately trained for seven days under their own Commanders, next for seven days together in Divisions for the mutual co-operation of the two arms on ground of varied character, and finally for fourteen days in Army Corps, of which

* Since then Generals belonging to the other arms have been given high commands in the Artillery, and certainly not to the disadvantage of the latter arm. Similarly officers of high rank, who have come from the Artillery, have occasionally been given commands of Infantry and Cavalry.

seven days were to be spent in a review and Corps manœuvres and seven days in sham fights over fresh country. The horsed batteries, both of Horse and Field Artillery, were to take part as much as possible in these manœuvres.

But when the firm conviction gained ground that the peace which had recently been won was to be of a lasting nature, economical motives, which we cannot deny were based on very good reasons, came to the front. These led, first, to the reduction of the whole period of manœuvres to twenty days, a measure which was effected by an Order of the 27th October, 1828. Then, in the year 1833, an attempt, which was prosecuted up to the year 1856, was made to introduce a two years' service with the colours for all Infantry Regiments of the line. It is very evident that by this the training of the mass of the Army would have been reduced to only what was absolutely necessary, and that this evil was one which would grow as time went on, for one half of the Active Army in those days consisted of Landwehr of the first levy, to which it was impossible to give an adequate training at any time during the whole of its service.

It must, however, be acknowledged that endeavours were made to stave off further evil by the manœuvres which were held almost every year for two Army Corps. It can easily be doubted whether this was sufficient to meet the case, for it must have been extremely difficult not to have noticed, in planning and carrying out manœuvres, the insufficient military training of many corps or regiments, especially those of the Landwehr. Fortunately the idea that the peace was to be a lasting one turned out to be correct, and Prussia, putting aside certain military demonstrations that were made on her eastern and western frontiers, arising from complications in Belgium and Poland, was not called upon to undertake any warlike operations of a serious nature.

We may, therefore, congratulate ourselves that the military spirit in our Army was quickened by a Royal Order of the 12th July, 1840, which again drew attention to the importance of peace manœuvres, and caused a set of Instructions to be

framed having special reference to the spirit in which they were to be carried out.

The Order-referred to, addressed to the War Minister, was as follows:—

“The manœuvres, which were ordered by His Gracious Majesty the late King on the re-organisation of the Army, are in the highest degree instructive, and most valuable as a training for real war. They formerly contributed in no small degree to our successes in the glorious campaigns of 1813–14–15. With a view of causing the same spirit to continue as heretofore, and of furnishing the Army with a guide, consisting for the greater part of a summary or essence of the different Regulations that have been issued on so many occasions, and which are for the general use of the service in planning and carrying out all manœuvres and field exercises, I have caused a memoir to be issued to the Army on the subject, which has been prepared by the Chief of the General Staff at my command. With the contents of this I fully agree, and express my desire that it should be closely followed throughout, but more particularly as regards the two principles which are therein distinctly laid down, viz., first, that the Brigade is to be considered as the largest tactical unit with which manœuvres of a strictly tactical nature, as prescribed by the Regulations, are to be carried out; and secondly, that manœuvres are invariably to commence with a combination of the different arms, so that the use of the three arms may be practised with a common object, and the movements of troops suited to the peculiarities of ground.

“I desire that you will cause this to be strictly observed in the Army, and draw the attention of Generals and all officers to the fact that they only act in accordance with the object of these Regulations if they devote an equal share of attention and care to the different kinds of training of the men in their charge, and pay as much attention to parade and drill as to manœuvres.

(Signed) “FREDERICK WILLIAM.

“*Sans Souci*, 12th July, 1840.

“To the War Minister v. Rauch.”

The following are the instructions of General v. Krauseneck, which are quoted in the above-named Royal Order :—

“The object of manœuvres is :—

“To train officers of all ranks and men, so that they may be fully up to the duties they have to perform in actual warfare, and that the latter may use their arms with skill, and be able to carry out the necessary movements with precision and order.

“To be able to know the degree of order that a body of men has acquired.

“Manœuvres may be divided into two kinds, viz. :—

“1. Those which may be considered as purely tactical, or in which the training of men to the use of their arms, and accustoming them to the orderly and rapid movements required in an engagement (evolutions), are the points chiefly desired.

“2. Manœuvres having a general reference to the ground, according to a preconceived ‘general idea,’ that is to say, sham fights, viz. :—

“a. Without dividing the force (Division or Army Corps) against a skeleton enemy, under an appointed leader.

“b. In two separate forces, under two distinct leaders, acting against each other according to a ‘general idea.’

“The manœuvres in No. 1 are carried out according to the drill regulations of the different arms. It is of the highest importance that these should be accurately complied with, but it is also very necessary that the officer conducting the manœuvres should exercise a circumspect supervision and a proper and, above all things, very decided, general control. It follows from the nature of these exercises that the Brigade is the largest tactical body with which the object intended can be best attained in every way.

“If the different arms are to be practised together for one common object, a useful exercise will only be learnt when the nature of the ground must affect the movements of troops, or, in other words, when difficulties in the nature of the country have to be overcome.

“The object of the exercises in No. 2 is to practise officers and

men in the art of taking advantage of ground and forming an intelligent idea of the state of affairs at any time in an engagement. The object of a 'general idea,' clearly defining the military position, is to afford both the General directing the whole, as well as the officers commanding the different fractions of the force, an opportunity of displaying and perfecting their military *coup d'œil*, quick decision and the skill they have acquired in handling troops, according to the nature of the ground and other conditions affecting the situation at the time. It follows from the very nature of the object of these manœuvres that no movements must be laid down and no times given beforehand, but everything left in the hands of officers in command. The latter, moreover, must *only* be given the 'general idea,' and no directions affecting the issue of the situation; and the state of affairs at the end of the manœuvres should only be explained or given out as the result of the measures that have been adopted. It would, it is needless to say, be incompatible with the object of these exercises if the movements to be performed were in any way rehearsed.

"On the other hand, all manœuvres are useful and instructive if they cause troops to be placed in situations in which they are likely to find themselves in actual warfare, and practise them in overcoming the difficulties they are sure to meet with in the field. In war a Corps or a Division may possibly find itself on the march without in the least knowing when or where it may come on the enemy. The sudden and unexpected information of the approach of the enemy, or perhaps the presence of the enemy himself, must oblige the force at once to deploy from column of route into a tactical formation. The force may have been marching in several columns, in which case the difficulties of forming up in a tactical position rendered necessary by the sudden appearance of the enemy, may be materially increased. It is important that movements of this description should be practised, and that troops should at times be put in motion on the march and compelled either by the inspecting officer suddenly sending them information of the appearance of the enemy, or by his

causing the troops that are representing a skeleton enemy to appear unexpectedly, to carry out a deployment from column of route with order and precision in spite of all difficulties presented by the country. In order that these exercises may fulfil the object desired, and that faults and errors may be pointed out by the inspecting officer on the spot, and made by him the subject of instructive lessons, all movements must necessarily be carried out with the greatest deliberation and without the slightest precipitation.

"A most necessary condition is that order should never be lost in any manoeuvre. If the great precision required in halting and marching on the drill parade cannot be always maintained at manoeuvres, order must, nevertheless, on no account be wanting at the latter, for without order the proper handling of troops cannot be imagined as possible. The power of command by which every fraction of a body of troops down to, for instance, a sub-division* of a battalion, is under control at any moment by a mere word of command, must never be lost.

"The manoeuvres in 2*b* are the manoeuvres of two forces against each other. In these the two forces are placed in situations opposed to each other according to a 'general idea,' guided by which the officers commanding the opposing forces make their own dispositions from what appears best to them according to their own judgment of the situation. By these manoeuvres ability can be both displayed and practised in rapidly and rightly grasping situations which happen in real war, coming to a decision thereon, and acting in accordance with the judgment formed. The 'general idea' should in every case *clearly* and *fully* describe the military situation of both forces, but it should not allude to anything that should only come from the officers commanding the two forces as their own free judgment. To restrict the dispositions of the latter by any such measures would be exactly in opposition to the object of manoeuvres. The 'general idea' may define the strategical position of the opposing forces for a period extend-

* The German "*Zug*," which is $\frac{1}{3}$ rd of a company or $\frac{1}{12}$ th of a battalion.—(Tr.)

ing over several days, but the nature of the country and other circumstances may render it necessary to issue another 'general idea' for the manoeuvres that follow. But in no case should either of the commanders be given more of the 'general idea' than actually describes the military situation of the force under his command, or than he could actually know or learn from the means at his disposal in actual warfare. The military situation may also be changed and the necessity of forming fresh dispositions be imposed to meet the case caused by (supposed) unexpected tidings of events happening outside the tactical sphere of the manoeuvres.

"The dispositions of the Commanders determine the *general* movements and positions of the troops; they indicate the view which is taken of the situation, as regards both their own and the enemy's forces, the plan to be carried out, and the means that are to be adopted for attaining the same, but only so far as is *necessary* to make the orders that are connected with them *perfectly clear*. These should be as short as possible; and that which can be verbally ordered, as is generally the case in war, should not be made the subject of written communications. Every Commander follows according to the meaning of the dispositions that have been communicated to him, the object given him in them, according to his own judgment of the ground, of the position and movements of the enemy, and in short of every circumstance which can act advantageously or disadvantageously in the solution of his task.

"If the Commanders of both forces have had opportunities of showing how they can understand and grasp military situations, and, moreover, how quickly they can make up their minds to correct decisions, one important object of these manoeuvres has, we must admit, been fulfilled. Nevertheless, much would still remain to be desired if opportunity were not offered to Commanders of Brigades, Battalions, Squadrons and Batteries of acting according to their own judgment (in a limited sphere, it is true) and not working too mechanically, by giving them, in certain moments, tasks to carry out which belong to the general

undertaking. If the general plan of the manoeuvres did not admit of the juniors being thus called upon to act, it must be the result of a 'general idea' which does not fulfil the object intended by these exercises. But if the task to be fulfilled by both opposing forces is designed so as to meet all the requirements intended by manoeuvres, the dispositions given out should exercise the powers and skill of officers of *all* arms and ranks.

"There exists already in the necessary sub-division of a force advancing to meet the enemy into advanced guard, main body and reserve the means of giving to several Commanders the opportunity of acting, up to a certain point, independently on their own judgment. And if it appears desirable to make further detachments from the whole force, this opportunity is more and more increased in proportion.

"If the movements of both forces commence when, the positions of both sides being mutually known, further results can only be obtained by actual engagement, one very important element in making such manoeuvres instructive has been missed. The lesson of the sham fight, as a purely tactical exercise, is of itself little instructive. For even here the use of the ground in itself, or the application of tactical rules in accordance with it, is not of very great importance. The main object consists in the complete and proper use of the forces at hand for a distinct object. It consequently includes marches and movements outside the sphere of action of the enemy, in short, all the introductory measures, the value of which is eventually shown by the relative position of the two forces when they come into collision. The latter itself can only be decisive in real warfare.

"The 'general idea' must leave the field open for this most important part of the manoeuvres of two opposing forces. It should give the respective positions of both forces at the commencement of the manoeuvres, and the places from which the forces start, in a way suited to the general object of the exercise. But each side should be obliged to procure for itself

the necessary information on the position of its opponent, which is and should be wanting at the outset, and use the proper means for obtaining the same, precisely as would be the case in actual warfare. The distance between the opposing forces should be sufficient to allow plenty of room for the movements of the detachments which in war are used to obtain intelligence on the enemy's strength and position. The manœuvres will be more interesting and instructive if the country to be reconnoitred is of a *varied* description, and thus gives an opportunity for the use of *all* arms. The duties of the outposts, pickets, and supports, will, moreover, in the latter case require greater vigilance, and a more marked attention will have to be paid to the nature of the country, thus making the exercises all the more instructive.

"The 'general idea' may be so framed that it may be necessary for one side to await the movements of the other in a defensive attitude, or even await its attack, and perhaps oblige it to neutralise part of its strength on natural obstacles, and thus weakened, to carry on the contest with the reserves of its adversary. The choice of positions, especially the skilful use of ground for placing reserves, is in particular in this case the most important thing in carrying out these exercises. The *attack* in this case devolves on the opposing force. The value of the lesson on the latter side will then consist in perceiving the weak points in the adversary's position, in the skilful distribution of the attacking troops according to their numbers and arms, and in the proper composition and position of the reserves (which should *never be wanting*).

"The 'general idea' may induce both sides to take the offensive. In this case both sides will meet with a similar intention, viz., that of attacking each other. A rapid *coup d'œil* of the situation, as it appears affected by every circumstance—ground, strength and position of the enemy, &c., &c.—will in this case lead to the right line of action.

"The opposing forces then approach each other in accordance with the dispositions given out. Everything that now takes place is instructive according as it represents the facsimile of what

would actually take place in war, and if everything is carried out just as would be the case in actual hostilities. And in this it is above all things necessary to assign the proper value to the different kinds of ground manœuvred over, that is to say, how it would affect an engagement (the troops being equally good on both sides), and how to take advantage of it. If manœuvres are to be of any real use, means of carrying out an object should never be used which in war would either be impossible or attended with great disadvantage. For instance, at peace manœuvres an attack with the bayonet should never be attempted to carry out what could be gained in warfare by a superiority of fire.

“If the Commanders of Brigades, Battalions, Squadrons, Batteries, and the special arms are to have an opportunity of displaying their *coup d’œil*, decision, and the degree of military training they have acquired, the movements of manœuvres, taken as a whole, must not be so rapid or continue so uninterruptedly as to prevent each of the above Commanders having time to throw a glance on the situation he may find himself in, and make up his mind according to what he has been enabled to ascertain. Such over-haste, which is as unnatural as it is inconsistent with the object of manœuvres, generally results from the entire neglect of the measures adopted by the enemy, which in real war would either delay or check the progress of an engagement. Very often indeed moral effect is supposed to be taken into consideration, but this at peace manœuvres is, of course, quite out of the question. Again, attempts at turning movements, which are so constantly repeated, often lead to order and precision being lost before such would be actually the case in real war. A turning movement, *i.e.*, a movement threatening the enemy’s flank or line of retreat, cannot of itself be only looked upon as an actual advantage to the side which attempts the turning movement, and a corresponding disadvantage to the side which has its flank turned. Everything really depends in the long run on how the opposing forces actually came into collision on the turning movement being completed. The side which has had its flank turned, but which has its forces

well together, and its reserves at hand, can very often put its adversary, who has separated or too widely extended his forces, in a very critical position.

“In war an engagement consists of several different actions, both as regards time and place, and the same will be found to be the case at peace manœuvres, that is to say, if the country that has been selected for the manœuvres answers the purpose, and the handling of the different bodies of troops is, independently of the actual efficiency of the dispositions given out and consequent general direction of the manœuvres as a whole, suited to matters of detail—if, again, the individual order of the troops, such as is required on the ordinary drill parade, is never lost, or when it has been unavoidably lost owing to obstacles on the ground, it has been immediately restored—if, again, the formation of troops in Brigades and Divisions, according to the Regulations, is no further departed from than is rendered necessary by the ground and other circumstances at the time as would be the case in war—if, moreover, all movements (with very few exceptions) are carried out at the usual pace observed in marching—if arms are carried and used, the Infantry load and fire, the Cavalry charge and the Artillery serve their guns invariably as is laid down in the Regulations. If, indeed, all this is carried out, and if due attention is paid to the combined action of the three arms, the neglect of which so often leads to troops getting out of hand—a state of affairs fatal to military order—the manœuvres of two forces opposed to each other must always be highly instructive.

“If the whole be properly conducted with order and precision, the officers commanding Brigades, Battalions, Squadrons and Batteries, and the special arms, will also find time and opportunity to act every now and then independently, being guided by their own *coup d'œil* and decision to seize and turn to account any weak points exposed by the enemy, and thus be able to individually take a part in the whole and work for the side to which they belong. The interest in manœuvres, which must necessarily decrease in proportion as opportunities of displaying individual activity of this kind diminishes, will then be felt and extend to the lower ranks.”

The experience gained in the subject of manœuvres up to the year 1844 led to the issue of a Royal Order of the 27th February, 1845, which, as regards the general arrangement and duration of manœuvres, holds good to the present day. It has only received certain additions necessitated by altered conditions of warfare.

The regulations on the manœuvres of the Landwehr became obsolete when the relations which this force bore to the rest of the Army were altered.

This circumstance, together with alterations in tactics arising from the introduction of the breech-loader, which appeared every day more necessary, gave rise to the issue of the "Royal Instructions on Manœuvres" of the 29th June, 1861. The arrangements as regards the division of time for the manœuvres of troops intended for active operations in the field were retained, otherwise the Rules and Regulations connected with former Instructions underwent a thorough revision and sifting. The most important object effected was, however, the introduction of certain tactical principles on the best use to be made of the breech-loader when opposed to an enemy armed with the muzzle-loader, and hints on the use of the rifled field gun then being introduced.

But the experience gained in the campaigns of 1864 and 1866, the complete armament of the Artillery with rifled guns, and last, but not least, the conviction that in the next war the enemy's Infantry would be found armed with the breech-loader, caused the Royal Instructions just mentioned to be completely revised. A project prepared by the Chief of the General Staff of the Army, and examined by a Commission of Generals of all arms of the service, received the Royal Sanction, dated 17th June, 1870, and was issued without alteration to the Army after the war of 1870-71.

These Royal Instructions were superseded in 1887 by the Field Service Regulations, and of these again a fresh edition was issued in 1900, embodying the experience gained since 1887.

The introduction to these Regulations treats of the peace time preparation of officers and men for field service. Part I,

which is of a purely tactical character, deals with subjects affecting the Army when on active service only. Part II refers to autumn manœuvres. There is an Appendix dealing with the written reports called for from officers making Staff tours in time of peace.

The following observations upon Army manœuvres are, as a matter of course, in strict conformity with the provisions of the Field Service Regulations, hereinafter referred to as the "F.S. Regns."

CHAPTER II.

PREPARATION FOR MANŒUVRES.

To give the troops an opportunity of exercising every year over a country which shall be, as far as possible, unfamiliar to them, each Army Corps command is divided into a number of manœuvre districts. Unless special circumstances render this inadvisable, it is desirable to put these districts on a regular roster, so that (according to the size and number of the districts) each district is assigned for manœuvres once in from five to ten years. The object of this is that the inconvenience caused to the civil population in each province or Confederated State shall be, as far as possible, equalised.

This system has the further advantage that the troops next on the roster for manœuvres can make themselves generally acquainted, a year or even two years beforehand, with the geography of the manœuvre district. They are also able to correct and keep up to date the billeting lists (*vide* Chapter VI, page 179), and to arrange with the civil authorities for the preparation of new lists when required. In the case of the Guards, billeting arrangements have to be made in consultation with the General Officer Commanding Third Army Corps.

As a rule the Army Orders for the conduct of the manœuvres during the current year are published in February. The Staff of Army Corps and Divisions then at once begin the work of preparation.

We will deal with these preparations in detail, since some of them form a not unimportant part of the training of an officer of the General Staff for his duties in war.

In the first place, the manœuvre area for the autumn manœuvres must be fixed, and the general nature of the operations communicated to the civil authorities. In the case of "The Imperial Manœuvres" this cannot be done until the sphere of the manœuvres has been published in Army Orders. At the same time a decision must be come to as to whether Army Corps manœuvres are to be held. This will only be possible when the manœuvre districts assigned to the two Divisions are adjoining or not far distant from each other. For compact commands this can always be arranged. But in a command of long, irregular shape the annual changes of manœuvring ground may leave the Divisions so far apart that long marches—or, preferably, the transport of troops by rail—may be necessary in order to bring them together. This will involve a material increase of expense, which is subject to the sanction of the Minister for War, and may frequently prevent Army Corps manœuvres from being held. If, however, the geographical conditions are favourable, the manœuvre ground may be marked out on the map and the general scheme worked out.

dispersed:
Since the greater part of the Infantry taking part in autumn manœuvres usually return to their stations by rail, it is desirable to arrange for the manœuvres to conclude in the neighbourhood of a large railway station—a junction if possible—in order that the de-concentration of the Infantry may commence, and, if possible, be concluded, after the final battle on the last day. (See Chapter X, page 208) Besides the saving of expense, this leaves the neighbouring villages clear for billeting the mounted troops, so that these do not have to start on long and fatiguing marches immediately on the conclusion of manœuvres.

It will rarely be possible to billet an entire Army Corps during manœuvres, except on the day of rest which intervenes between Divisional and Army Corps manœuvres. For even in a populous district the daily concentration of the troops and their return to billets will make heavy demands on their marching powers, which is undesirable in view of the exertions required of the troops on the ground. It will therefore be advisable to assume

that the troops will always bivouac during Army manœuvres, and merely to arrange for the provision of "emergency quarters" (Chapter VI, page 179) in case of severe weather.

A bivouac on such a large scale, namely for 20,000 men and 3,000 to 5,000 horses, requires a large and conveniently accessible water supply for men and for horses. This will usually necessitate the division of the force into several bivouac camps. (*See F.S. Regns.*, para. 388.)

The choice of the fighting ground will be considered in Chapter V; for our present purpose we need only bear in mind that it must be such as to allow the deployment of long lines of Infantry and Artillery, and to admit of the free movement of masses of Cavalry.

At this period of preparation, namely the month of March, it appears neither necessary nor desirable to proceed to the manœuvre area in order personally to reconnoitre the ground. A Staff officer, experienced in map reading, can obtain all the information required at this stage from the map; the details which the map does not give, namely, the nature of cultivation and periods of harvest, cannot be ascertained till April, possibly later.

As soon as possible, a time-table must be drawn up, showing provisionally the days assigned to each Division and to each Brigade, as laid down in *F.S. Regns.*, para. 552. At this stage the question will arise how far it is desirable to shorten the periods of Brigade manœuvres to give more time for Divisional and Army Corps manœuvres.

The opponents of so-called "petty manœuvres," in which single units are opposed to one another, urge that the object of manœuvres is to prepare troops for great battles, not for minor engagements. For the result of a war is determined by a decisive battle, not by the success or failure of minor combats. Moreover, under modern conditions of war the occasions on which a small detachment could act independently for days at a time will be rare. The truth of this contention must be admitted, but it should be added that the same reasoning applies to Divisional and Army Corps manœuvres. For the independent action of a

single Brigade or even of a single Infantry Division must be of rare occurrence on service.

The difficulty which was formerly felt in maintaining the same strategical situation throughout the whole of the Brigade manœuvres has been overcome by the provisions of F.S. Regns., para. 573. But it is still the case that the units combined on any one day of the manœuvres are often allowed more freedom of movement than would be possible in war on the large scale. For one if not both flanks would then be supported by other troops, the presence of which, while affording protection, would restrict liberty of action.

But so long as we hold, and rightly hold, that Senior Staff officers must be trained for their higher duties by the frequent handling of forces of all arms, so long as we are assured that self-reliance and decision can only be developed by freedom of action under a sense of responsibility, Brigade manœuvres will remain indispensable. It is much to be regretted that the constant extension of towns and villages encroaches year by year upon the local manœuvre grounds upon which the three arms can work together.

Moreover, we may practise sound battle tactics even in Brigade manœuvres, if these be so conducted as to require the proper handling and combination of units to carry out a given task, and so that each subordinate Commander has full liberty within the limits imposed by the necessity of combined action. Such tactics are a fundamental necessity in every fight, from a skirmish to a great battle. And in teaching such principles, Brigade manœuvres form an invaluable step from simple to more difficult tactics. We consider therefore that Brigade manœuvres are so useful that it would be highly undesirable to cut them down to three days in every year.

The manœuvres can in no case be continued beyond the day fixed in Army Orders, by which all units must have returned to their stations. But the date on which they are to commence is determined with reference to various considerations.

It will first be necessary to consider which troops, if any, are

to be exercised on hired Brigade manœuvre grounds; how many marches are entailed by the moves from such grounds to the manœuvre area; how far they are stationed from the projected manœuvre area; and on what date the Brigades will have finished using any manœuvre grounds that may be situated within such area. It will also be necessary to take into consideration the prevailing conditions of weather and the completion of the harvest.

The time-table of the Brigade and Divisional manœuvres must be framed with due reference to Sundays and intervening days of rest. The latter should fall between Brigade and Divisional manœuvres, and between these and Army Corps manœuvres. It is desirable that these intervals should coincide with the changes in the strategical situation as embodied in the "general idea." It may possibly be advisable to allow Brigades and Divisions to make their own arrangements for days of rest. But it should be remembered that the General Officer Commanding will be able to see more of the work of the troops if their days of rest are arranged to fall upon different dates.

Simultaneously with the issue of the time-table the delimitation of the Divisional manœuvre areas must be published in orders. This requires a careful study of the map. It is not only necessary to assign to each Division an area sufficient to allow of a succession of instructive combats under varied conditions; besides this, the facilities afforded by the country for billeting troops, when necessary, must be considered. Carefully-calculated estimates of the requirements of the Divisions in these respects must be framed, upon which the delimitation of the available ground is to be based. But it is advisable to allow each Division, by agreement with a neighbouring Division, to encroach upon the ground assigned to the latter.

The Corps troops must be attached for manœuvres to the various divisions. Their further sub-division between Brigades is best left to the Divisional Staff, as this will affect the Divisional manœuvre schemes and the distribution of the ground to Brigades.

If Army Corps manœuvres are to be held, the date of their

termination must be fixed. The Divisional manœuvres must then be so arranged that when they terminate the position of the troops corresponds roughly with that desired at the commencement of the Army Corps manœuvres. Each Division must be therefore ordered to have its troops in position on a given front at the end of its manœuvres. When secrecy is desired, this order will be communicated separately and confidentially to each Division.

It may be impracticable to hold Army Corps manœuvres, as when the district next on the roster is unsuitable for instructive handling of large bodies of troops, or when the Divisional manœuvre areas are far apart. In such a case it is desirable to arrange that the manœuvres of one Division take place later than those of the other, so that the General Officer Commanding Army Corps may be able to attend both. Possibly, moreover, the General Officer Commanding Army Corps may wish to execute manœuvres against a marked enemy with the whole of one Division.

Finally, it must be decided which Generals (with their Staffs) are to be appointed Directors of Brigade and Divisional manœuvres, what funds for billeting are to be assigned to each Division, and what reports are required to be rendered. The work of the Directors of manœuvres will be facilitated if they know beforehand which senior officers are to be in command at the inspections, during manœuvres, by the General Officer Commanding Army Corps; this may affect the manœuvre schemes and the distribution of units. But this information will not be communicated to the Directors of manœuvres till a later period of the year.

The Staff work, as above outlined, should be finished by the middle of April at latest, and the necessary instructions communicated by an Army Corps circular to the Divisions.

Simultaneously with the work of preparing for autumn manœuvres, the distribution of the funds allotted to the Infantry for musketry and field firing must be worked out, and preparations made for the principal summer exercises of all arms.

The allotment of the funds will in general be based upon the

practice of the previous year. But the special needs of individual units must be carefully re-considered every year. Special regard must be had to the requirements of troops stationed in places where the conditions are unfavourable for instruction. To avoid spending more than the sum available it is well to keep in hand funds sufficient to defray the cost (as determined by previous experience) of holding Infantry field firing on the manœuvre grounds or upon land hired for the purpose. Whether the remainder of the money be handed over to Divisions, so that they may make their own arrangements under the Appendix to para. 14 of Allowance Regulations, as modified by Army Orders of 26th May, 1904, or whether the whole amount be kept in hand and each item of expense considered separately, is a matter which must depend upon personal considerations and upon the experience gained in previous years. In addition to the above-mentioned sums a reserve fund must be kept in hand for emergencies. But in all cases care must be taken to see that the money is not diverted from its proper purpose, namely, the training of the Infantry in fighting and in service musketry.*

Closely connected with the preparations for manœuvres is the arrangement of the order in which the different units are to use the manœuvre grounds and the extended drill grounds, the Artillery ranges and the lands hired for manœuvres, and the period allotted to each unit. The manner in which this programme is arranged may materially affect the brigading of the troops for manœuvres and the date on which they may be commenced.

The task of arranging for the successive training of all the troops of an Army Corps upon a single manœuvre ground, and of varying the order from year to year, is both difficult and thankless. It is not easy to reconcile the interests of the different units, nor is it usually possible to satisfy everyone; but the Army Corps Staff is best qualified to decide between conflicting claims. The period for which the ground is allotted to each body of troops is necessarily short, and the Brigades must inevitably tread upon

* Service musketry means shooting at service targets under service conditions, as distinguished from practice at the butts.—(Tr.)

one another's heels. Some of the troops are obliged to finish their field training and field firing early in the year, since the total time available for work in the field does not exceed five months. When a number of troops are out together the camp accommodation is often barely sufficient. The result is that many get neither full time nor proper facilities for training; this is a standing grievance and a well-founded one. Sometimes the accommodation in standing hut camps can be supplemented with tents, which may be still available in Ordnance depôts. But even this does not overcome the principal difficulty, which is that the manœuvre grounds are overcrowded and that the troops get in each other's way. This state of things cannot fail to be prejudicial to the training of the troops.

These difficulties diminish as the number of troops to use the manœuvre ground is reduced. It would be well if even the Army Corps for which manœuvre grounds are provided were occasionally excused from compliance with F.S. Regns., para. 562, and were allowed to send out at least one Brigade (to be changed every year) to do the whole of its field training and field firing in the country, off the Government manœuvre ground. Nobody would nowadays propose to use the permanent manœuvre grounds for autumn manœuvres. Other considerations, which render it desirable that these permanent grounds should be occasionally exchanged for the open country, will be discussed in Chapter III.

The political difficulty which stands in the way is that when the purchase of the permanent manœuvre grounds was first sanctioned by Government, this expenditure was justified by the expected reduction in the cost of making good damages to crops and of billeting troops. Still, if the ground so acquired proves insufficient for the accommodation or the training of the troops which have to use it, it will be necessary either to add to the Government ground or to supplement it by hiring ground for manœuvres in the country.

The following points should be borne in mind in arranging the sequence in which the different bodies of troops are to visit the Government manœuvre ground :—

Except for flying visits, troops are not to be sent to the manœuvre ground earlier than the middle of April. Before this date the preliminary training of the troops will be incomplete and the weather will ordinarily be too severe; both these conditions militate against the proper *progressive* training of the men. But as soon as company inspections are over the first of the Infantry units must leave barracks and commence service musketry on the manœuvre ground. In the interests of the training of the battalions it is desirable that the battalion inspections should be carried out on the manœuvre ground. This, however, would in many cases oblige the battalion to make two visits to the manœuvre ground, which is rarely possible.

A portion of the Infantry must therefore unavoidably carry out their principal musketry practices, as well as their Regimental Brigade training, early in the year. This interferes with the proper progressive training of the men, which requires that they should proceed gradually from easy tasks to more difficult ones. Accordingly we find that in most cases the results obtained at field firing by these troops are inferior to the results obtained by troops which go into camp later in the year. It is therefore necessary that the order in which the troops move out should be changed from year to year.

Infantry Brigades will, on the average, spend three weeks on the manœuvre ground. This includes five to seven days of Regimental exercises and five days of Brigade exercises. Of the remaining days two or three will be allotted to field exercises, and the remainder to musketry, which will also have to be carried out on some of the afternoons after the Regimental and Brigade exercises. Further details are laid down in Regulations for the Use of Manœuvre Grounds, paras. 17 and 18.

The available hut camp accommodation will usually allow of a Cavalry Brigade using the ground simultaneously with the Infantry. Not only Cavalry Brigade and Regimental exercises but also squadron training is allowed to be carried out on the manœuvre ground. Cavalry and Infantry do not interfere with one another to any great extent, and they are able to practise many useful exercises together. .

The duration of Artillery practice is laid down in Field Artillery Practice Regulations, para. 270. If the whole of the Artillery of the Army Corps has to practise on the manœuvre ground this leaves little time available for the other arms. Every endeavour should therefore be made to carry out at least a part of the Regimental and Brigade exercises and several series of the practice in the open country. (*See F.S. Regns., para. 548.*) When Artillery is practising the amount of ground left clear for other arms is small, and if Cavalry or Infantry have to use the ground during Artillery practice this should be taken into account in estimating the number of days allotted to them. It is best to have the two Artillery Brigades on the ground together, if the hut camp accommodation permits; it may possibly be extended by pitching stable tents.

In the interests of Artillery training it is desirable that this arm shall not be moved into camp before the beginning of June; but, on account of the competition for the Emperor's prize, they should finish their practice as soon as possible after the 1st of August. If possible they should not march straight from practice to autumn manœuvres. Hence, generally speaking, the period for which the manœuvre ground is allotted to the Artillery should be from the beginning of June to the beginning of August. As the preparation of Artillery targets requires a large quantity of running target wires, sheet iron, planks, &c., to be brought on the ground, which cannot be removed immediately on the conclusion of practice, it is as well to allow not only two days (as provided by Manœuvre Ground Regulations, para. 89), but eight or ten days to elapse before the ground is used by large bodies of Cavalry. Part of the Cavalry will therefore have to do their field training before the Artillery, part afterwards. As aforesaid, it is best to make them exercise simultaneously with the Infantry.

Rifle battalions, in accordance with F.S. Regns., para. 347, are not to be attached to Infantry Brigades until the commencement of Brigade exercises. In consultation with the Inspector-General of Rifle Regiments it may be arranged for them to carry

out their service musketry somewhat earlier than the line battalions. The same holds good for machine-gun detachments. These troops do not require to be considered in the allotment of field firing funds, as they have special funds of their own. Moreover, they carry out a part of their service musketry in the open country.

It will be necessary to reserve some days for the Pioneer Battalions, possibly also for Non-Commissioned Officers' schools. The War Office may also require certain days to be reserved for the School of Musketry. Several special exercises have also to be arranged for; thus the regiment of Heavy Artillery attached to the Army Corps has to do two or three days' training with a force of all arms, unless it takes part in autumn manœuvres (F.S. Regns., para. 550) or in siege operations. To save expense, these three days' training are usually ordered to be carried out on the manœuvre ground. Similarly, the special Cavalry exercises prescribed by F.S. Regns., para. 565, require the concentration of such a number of mounted troops as to leave no room for Infantry on the ground while they are being carried on.

From the end of manœuvres to the following spring it is not necessary to allot the ground regularly to different units, as it will be only occasionally visited by small bodies of troops.

Similar considerations apply to the allotment to units of Artillery ranges, enlarged permanent exercising grounds and hired manœuvre grounds in the open country,

CHAPTER III.

DRILL GROUNDS, MANŒUVRE GROUNDS, HIRED MANŒUVRE
GROUNDS AND PARADE GROUNDS.

Most of the older garrison drill grounds were very small, and dated from the time when troops exercised in close formations under peace conditions, and when any attempt at service training was the exception. The surface was usually firm, but, unfortunately, it was nearly always perfectly flat. Much money has been spent by the Government in purchasing new grounds or enlarging the old ones, and, so far as the limited space permits, we are now able to keep up to the modern standard of military training, involving the scientific use of cover and the recognition of the increased range of the rifle.

If a drill ground is partly level and partly undulating, then the former may be used for mere drill, while the latter enables small bodies of troops (Companies, Squadrons and Batteries) to be taught the elements of manœuvre. If there is a village, a wood, or a defile adjoining it, the value for instructional purposes is much increased.

Manœuvres must also be practised in level open country. For, in war, troops have sometimes to fight in a neighbourhood which is perfectly flat and affords no cover of any kind, and there is no doubt that an engagement on ground such as this must, with the enormously increased efficiency of modern firearms, call for a higher degree of excellency, both in officers and men, than one in country which affords temporary cover for the formation and movements of troops. All ranks must, however, clearly understand whether the exercise is

merely drill in the regulation military formations, or whether it is intended to simulate a combat in the open.

Full instructions for the use of the drill ground by the Infantry are given in Infantry Training, Part II, paras. 6 to 11. The Cavalry and Artillery drill books do not contain these detailed instructions, since the principles underlying the movements of these arms have been subjected to no such radical change as in the Infantry. The latter have changed their fighting formation from closed ranks to swarms of skirmishers; but the Cavalry still charge knee to knee and the Artillery advance in line as of old.

In the Cavalry the fighting formations are much the same as those used at drill. This arm, therefore, requires a wide level plain to exercise on. When the Cavalry have learnt to move over open ground they will have no difficulty in applying this knowledge to broken or varied country. Their drill book lays down that they are occasionally to work over difficult ground.

The Artillery must practise forming line, the different methods of coming into action and of unlimbering, increase and decrease of front during the advance, and so forth, upon level ground. The application of these academical formations to manœuvres will be learnt upon undulating and broken ground.

Generally speaking, the drill grounds will have fulfilled their object if they suffice for the training of Squadrons, Batteries and Companies. But for the training of larger bodies these drill grounds cannot be used with advantage; they are too cramped and present too little variety. They moreover lead to undue attention being given to some special form of tactics suited to that particular ground.

Manœuvre Grounds.

The difficulty of carrying out Artillery practice and manœuvres of large bodies of troops over private ground, the inconvenience caused to the civil population by clearing the ground, the expense of billeting, and, finally, the difficulty of finding suitable ground

in the neighbourhood of military stations, are considerations which have led the Government to acquire permanent manœuvre grounds. These have been formed either by the purchase of large tracts of land or by the extension of existing Artillery ranges. These permanent grounds enable troops of all arms to be assembled to carry out manœuvres on the large scale, musketry and artillery practice. All military stations will be provided with manœuvre grounds as the available funds permit.

Each manœuvre ground has its standing camp of huts, intended to accommodate one Brigade of Infantry and one of Cavalry or Artillery. This saves the troops the fatigue of daily marching to and from the ground, and relieves the neighbouring villages from the inconveniences of billeting.

In the interests of the training of the troops it is desirable that a manœuvre ground should afford as many varieties of country as possible. It should include flat open ground, hilly country, streams, marshes, woods, coppices and deserted villages; the latter features prevent the view over the country from being too unimpeded. To make such a ground suitable for all arms, various works must be executed, but these must not be such as to interfere with the natural features of the country. Streams may have to be bridged or dammed, woods cleared, coppices trimmed, loose sand made firm and so on. But although the Artillery are constantly asking to have woods and trees cut down, it is not advisable to accede to such requests except in urgent cases, and then only when such clearing will not prejudice the action of the other arms. (F.S. Regns., paras. 97 and 99.)

The permanent manœuvre ground cannot be too highly valued as affording means for the service training of officers and men, an intermediate step in the preparation of the troops for manœuvres. But the training received on the permanent ground can in no sense be considered an efficient substitute for regular manœuvres.

There are certain drawbacks to the use of the manœuvre grounds which have already been referred to in Chapter II. page 149. The troops return to the same neighbourhood every year

and get to know it too well; the camps are often unavoidably overcrowded, which reduces the area available for practice and manœuvre; and the space is often too small to afford sufficiently long ranges, especially for Artillery.

In spite of the size of the manœuvre grounds, these drawbacks may often lead to the training of the troops becoming one-sided, unless inspecting officers take especial care to correct such defects. Every time that an officer of the General Staff visits these localities he must carefully study the topography in order to introduce as much variety as possible into the tactical inspection scheme, and to consider the possibility of utilising some little-used corner for the next inspection (Chapter IV, page 163).

Another evil consequence of the repeated use of the same locality is the habit of giving names to all prominent features. This custom, which is prevalent on some manœuvre grounds, is, however, easy to put a stop to. The men naturally like to commemorate the names of their favourite Generals or of victories won by their own corps by naming hills after them. But this practice should be restricted to the naming of streets in camp and parade grounds, in order that the troops may not get into unmilitary ways of finding their way about the country.

For the same reason the $\frac{1}{4}$ inch (1½ inches to a mile) map should only be used in Staff offices, and for making out schemes. The only map used upon the ground should be the Staff map of $\frac{1}{6}$ inch, or 2½ miles to the inch.

But these minor regulations can only mitigate the principal drawback to the use of a permanent ground, which is that troops soon get to know it far more intimately than is consistent with service conditions. The ground in front of the positions which are oftenest attacked soon becomes familiar to all ranks, and they get to know every undulation and every hollow in it. The attacking and the defending force know exactly where the enemy will appear and where he will disappear. All distances are known, or can easily be measured on the 1½-inch map. The process of change of subordinate officers of Squadrons, Batteries

and Companies does not take place sufficiently rapidly to mitigate this evil to any extent.

The only way to escape it is not to allow the troops to use the same manœuvre ground two years running. This is prescribed by the Regulations as advisable, if two permanent grounds are available. But very few Army Corps are so fortunate as to have two grounds of their own. The only resource then remaining is to exchange grounds with a neighbouring Army Corps. This has long been customary as regards Artillery practice camps, and the Artillery now endeavour to carry out their manœuvres on a different ground every year. At the great Cavalry manœuvres regiments from different commands are concentrated at one manœuvre ground. It would be a distinct advantage to carry this system further and let the Infantry change ground every year; the practicability of this is only limited by considerations of expense.

Those Army Corps which have no manœuvre ground, or none sufficiently large, must concentrate a part of their troops every year for combined training, as directed by F.S. Regns., paras. 552, 562 and 563. So far as consistent with the funds available, the convenience of the civil population, and the distances to be traversed, it is advisable to hire a manœuvre ground in the country. The expense will naturally be lessened if the ground lies in the manœuvre area. According to circumstances, a "Brigade drill ground"* may be chosen which was hired by another Army Corps in a previous year, or it may be selected by Brigade Commanders during their Staff rides, or by Staff officers from the nearest military station, or officers of the General Staff.

The General Staff officer entrusted with the duty of selecting a manœuvre ground should spare no pains to find one really

* It is to be wished that the term "Brigade Drill Ground" were altered to "Manœuvre Ground," and that the Brigade, Regimental and Battalion "drills" of Infantry and Cavalry were styled "manœuvres." The Artillery have already introduced this reform. The time is gone by when troops were "drilled" in large bodies.

well adapted for the training of the troops. It must be of the necessary size, as laid down in F.S. Regns., para. 563, and it must admit of varied and instructive tactical schemes. For artillery practice and service musketry a clear range of sufficient length is requisite, but it is necessary for the training of all arms that at least part of the area should be intersected and wooded country.

The question of quartering and supplying the troops that are to be assembled for training on a manœuvre ground has also to be taken into consideration, and one of the chief difficulties met with is, that the more prosperous and thickly inhabited the district is, the greater is the value of land and degree of cultivation, and consequently the higher are the indemnities to be paid. In a poor district, on the other hand, where waste or fallow land or large tracts of rye stubble may be expected to be found, the country is generally sparsely populated, and the villages offer very limited means of quartering troops. The quarters of the troops to be assembled for exercises have to be scattered in the latter case over so wide an extent of country, and the daily marches of certain fractions of the troops to and from the manœuvre ground might be so long, as to render the choice of the ground a doubtful one. For the sake of the exercises themselves, as well as with a view of husbanding the strength of the soldier for his exertions on the ground itself, care should be taken that Infantry be not quartered more than 8 kilometres (5 miles), and Cavalry not more than 12 kilometres (7½ miles) from the manœuvre ground. In a case of the kind it is advisable to quarter the troops in the villages nearest the ground to the utmost extent of their capacity. The objections naturally raised by the civil authorities against such a proceeding would have to be met by the General Staff officer by clearly representing the difficulties of the situation and holding out every prospect of lightening the burthen on the inhabitants.

It may, however, be noted that the increase in the number of villages and habitations during the past forty years has not kept pace with the increase in the numbers of the Army; and this

limits the extent to which it is possible to quarter troops on the inhabitants in time of peace.

Whether the men are to be billeted or merely quartered, the military authorities supplying food, is a question to be decided in consultation with the civil authorities. The latter method is much disliked in some districts, as the inhabitants are put to great inconvenience without adequate compensation. It is much better if the inhabitants can be got to consent to billeting. When mounted troops are to be billeted it will be necessary to arrange for a *depôt* of forage and straw, as the inhabitants will not have a sufficient surplus beyond their own requirements to supply the wants of a large body of troops such as a Cavalry Brigade,

Parade Grounds.

For reviewing troops it is desirable that the ground should be level, so that the reviewing officer can see the whole of the troops assembled at once, and so that the subsequent march past may take place under the most favourable conditions.

In calculating the dimensions of the ground the formation of the troops both when drawn up and when marching past, as laid down in Regulations, have to be taken into consideration. The marching-past ground must be facing the troops when drawn up, and should preferably be sound level turf.

In reviewing large bodies of troops, next to the importance of finding quarters for the troops within a short radius of the ground (Infantry within 6, and Cavalry and Artillery within 9½ miles at the outside), comes that of having a sufficient number of roads leading to it, and the allotment of these roads to different units. The more troops have to use one road, the earlier must the first units start, and the longer they must wait about on the review ground. To avoid checks and to prevent columns crossing one another, it may be necessary to fix the times at which they are to leave barracks. Neglect of these precautions often entails useless fatigue to the men.

It facilitates the drawing up of a large force for review if

the ground be marked off by banderols, set up to mark for the right flank of each unit. These are to be removed as soon as the troops have formed up for review.

The roads by which the troops return to barracks are also to be allotted to the different units. Otherwise a number of troops, in a hurry to get home, will crowd on to the same road. This allotment may oblige some units to go a little out of their way, but this inconvenience must be put up with for the sake of preserving order.

The more carefully the preparations are worked out by the Staff, the more perfectly all difficulties are foreseen and avoided, the later will the troops have to start, the more punctually will they arrive, and the sooner will they get home to barracks.

CHAPTER IV.

INSPECTIONS.

IN making out the inspection programme the leading idea to be borne in mind is that the General Officer Commanding an Army Corps should as far as possible personally carry out the inspection of all the troops under his command. The order in which the inspections are to be carried out will depend on the location of the military stations and manœuvre grounds.

Experience shows that it is well to entrust the preparation of the inspection programme, in so far as it is concerned with the greater manœuvres, to the Staff officer whose duty it is to carry out the preparations for these manœuvres. The details of the tour are left to the Staff officer who is to accompany the inspecting officer. The more carefully the tour is worked out, down to the smallest detail, the more certainly will all hitches be avoided, and the pleasanter will the tour be both for the General and for the troops.

It is only natural that inspections should be important events in the eyes of the troops ; they mark the culmination of the training of the men in its various branches. But, from a higher point of view, inspections are a test not only of the fitness of the troops, but of the knowledge and efficiency of the General. The higher the rank of the inspecting officer the more important is the method of his inspection and the conference which follows it. It is therefore the duty of the Staff officer who accompanies the General to prepare himself carefully beforehand for the duties which may devolve upon him, such as, for instance, the setting

of tactical and other tasks. To carry out this latter duty properly he must have an accurate knowledge of the topography of the station or manœuvre ground.

The troops are naturally inclined to devote most attention to the subjects in which they expect to be inspected. Now, every branch of military duty contained in the Regulations should be carefully practised, but it is not permissible to devote undue attention to less material matters at the expense of more important ones. Many of our Regulations, especially those of the Infantry, still contain a number of parade evolutions which are not required in war, and which might, therefore, well be dispensed with. These superfluities will disappear in good time; they hinder and delay the service training of the troops. His Majesty the Emperor expresses himself very plainly on this point:

“The duties required of the soldier in war must determine the nature of his training in time of peace.”

“It must never be forgotten that war is carried on not with weak peace establishments but with troops at war strength, and that all fancy work is thrown aside on the first day of mobilisation.”*

“The training of the troops will have been rightly conducted if they can do in peace what they will have to do in war, and if on the battlefield they have to unlearn nothing that they have learnt at drill.”†

If, then, the Staff officer has to prepare for the approval of his General schemes for the tasks to be executed by the troops at inspections, he will do well to bear these maxims in mind.

The extent of such tasks must be limited by the nature and extent of the ground on which the inspection is to be carried out. The scheme must not be complicated by strategical considerations, but must deal with a simple tactical situation immediately before a combat. The information available about the enemy, the relation of the troops to the main body and to troops on either side, and the task itself, must be stated as briefly and simply as

* Introduction to Field Service Regulations.

† Infantry Training, conclusion of Part II.

possible. Usually the task will not require to be stated, being evident from the situation. (F.S. Regns., para. 570.) It is immaterial whether the task is set verbally or in writing; it may be convenient to use the field message form, which saves errors and delay. But the Commanding Officer must always be allowed time, after he has given his preliminary orders which set the troops in motion, to explain the situation to his subordinates so that they can all act in accordance with the special idea. At manœuvres mistakes due to over-haste in issuing orders are of frequent occurrence. It is therefore advisable to conduct inspections patiently and to allow the Commanding Officer the necessary time for reflection.

On the cramped and level garrison drill grounds it is impossible to conduct complete combats, through all their stages, even with small bodies of men. On such ground it is only possible to illustrate the simplest phases of attack and defence. The inspecting officer must abandon any idea of a continuous tactical scheme, and must give out a fresh tactical situation of the simplest character for each task. But a too rapid and kaleidoscopic change of situations is to be avoided, for, even if the Commanding Officer has time to realise the new situation himself, he will not have time to explain it to his subordinates. Misunderstandings of various kinds will result, and the inspection will be a failure for which the blame will not rest with the troops.

The troops will be only called upon to execute elementary evolutions on the drill ground; by far the more important portion of their inspection will take place at manœuvres. It is not desirable for the inspecting officer to see mere drill on the manœuvre ground; attention should then be directed to seeing that the men can move across country in fighting formation without mistakes. The troops will then be able to devote their whole time on the manœuvre ground to service training. Modern fire discipline requires such a high degree of training that manœuvre forms a far better test of the efficiency of a unit than drill evolutions. However finished the drill may be, it can never be accepted as a criterion of efficiency,

When larger bodies of troops, such as Battalions, Regiments, and Brigades have to be inspected on a drill ground, the inspection will usually be necessarily limited to drill movements and marching past. The service inspection on the manœuvre ground or in the open country will in such cases become still more important.

In setting tactical tasks for Infantry it will rarely be assumed that the unit under inspection is acting independently. It must be supposed to be acting in concert with other similar units. And as most Infantry work is performed in combination with Artillery, the scheme of the inspection task should include the presence of Artillery, real, marked or imaginary. The presence of neighbouring troops on the flanks gives support during a manœuvre, but restricts liberty of action. This restriction limits the extension of front of the unit concerned and affects its formation in depth; this is specially instructive since this is what we must expect in war. It is well that such restrictions should be frequently enforced at inspections, since they form a corrective to the results of the unrestrained liberty of action which has to be allowed to Commanding Officers in training their men on the manœuvre ground.

Cavalry actions on service will not go off as smoothly and neatly as on the drill ground; they will be affected both by the tactical situation and by the shape of the ground. It is therefore imperative to carry out the inspection of large bodies of Cavalry (Regiments, Brigades and Divisions) either on a large manœuvre ground or in the open country. The ground chosen should of course be well suited to the action of Cavalry. Undulating ground often favours the successful action of Cavalry, since it enables them to appear suddenly, surprise the enemy and disappear again. But wide level plains, if not exposed to the enemy's Artillery fire, form the ideal ground for Cavalry action.

It is also desirable to set the Cavalry tasks to perform in difficult ground, where unexpected obstacles occur which compel the Cavalry leader to quickly change his plans, and which bring out the self-reliance of his subordinates. The tactical scheme and the disposition of the opposing troops must be such as to leave

the Cavalry in doubt up to the last moment as to which of their units will have to lead the attack and which units will have to support it.

Artillery must be tested in applied tactics on the manœuvre ground or in the open country. But while in the case of Cavalry or Infantry it may be occasionally possible to suppose that the corps is acting independently, with Artillery this is practically out of the question. Therefore in setting tactical tasks it is necessary not only to arrange for a marked enemy, but to mark at least the position of the Infantry of their own side. This will enable the men to appreciate the tactical situation. Two special tasks are particularly instructive, namely:—

- a. To deploy rapidly from a long column on meeting the enemy.
- b. To open fire simultaneously with a number of batteries from covered positions, so as to take the enemy by surprise.

Whenever the nature of the ground permits, it will be well, when inspecting a large body of troops, to let the tactical scheme be *continuous* and develop naturally through the whole series of operations.

It is important that the tactical inspection scheme should frequently illustrate the case of two bodies of troops meeting and giving battle. As stated in our Infantry Regulations (Part II, para. 80) most actions in which our Army will engage must be of this nature. It is true that a field day of this kind requires careful and elaborate preparation. But it will save time and trouble in moving troops into position if an opportunity be chosen when the troops are already in marching formation.

It is not desirable to commence a battle from rendezvous formation, especially where it entails moving the troops in this unwieldy formation about the country. For modern tactics discountenance the practice of assembling troops in mass as a preparatory formation, even on the defensive. In most cases the troops will have to be deployed from the marching formation into a number of parallel columns, each of which must keep to its column formation as long as possible. Concentration of the

troops in mass would only necessitate their immediate dispersion, and would be an utter waste of time.

The tactical enemy should, whenever possible, be of full strength. If it is necessary to have recourse to a marked or skeleton army, the provisions of F.S. Regns., paras. 608 to 612, must be observed. Similarly at least the inner flank of the supposed troops on either side must be real or marked.

The general principles which underlie the training, and consequently the inspection, of troops of all arms, are given at the beginning of this chapter. All other necessary information will be found in the text books of the three arms. If the inspections be conducted on this basis they will become highly instructive exercises.

If it is necessary for the inspecting officer, while at the manœuvre ground, to see any unit do drill movements in closed formations, then this should be arranged to take place on the parade ground at the beginning or at the end of the day's inspection. In the former case the evolutions will no doubt be executed with clockwork precision; in the latter case, a good march past after a tiring field day speaks well for the training of the men.

The duties of the Staff officer who accompanies the inspecting officer are varied and arduous. He must constantly keep his attention on the troops, and at the same time must always keep close to his General in order to note down the latter's remarks. Should he notice any mistakes due to imperfect comprehension of the inspecting officer's orders, he must set these right at once. He must carry orders and collect information. It may not be his duty to bring to notice small mistakes, such as the best troops are liable to make. But he must report to his General all errors of command and all failures due to defective training which require to be noticed or corrected. He must avoid urging his own opinion upon the inspecting officer. He must possess a complete knowledge of the tactics of all arms, power of quick observation, and, above all, tact.

During the conference which follows the manœuvres the Staff

officer should have the headings of his General's remarks arranged either in his head or in his notebook, so that no point may be missed. He will serve the interests of the Army by doing his best to ensure that no hard words are used at the conference. It is customary in our own service for all ranks to do their best at inspections. And consequently, the inspection day, which marks the culmination of a period of hard work and instructive training, should be a day of honour for the troops. A well-reasoned appreciation of the work done, in the course of which the Commanding Officers may occasionally have a word to say, will always be stimulating and instructive. But hard words cannot fail to diminish the self-reliance of the Commanding Officers and the willingness and zeal of the men. Even the worst malefactor should not be condemned unheard. The inspecting officer should put himself in the place of the Commanding Officer and consider what interpretation *he* would have placed upon the orders received.

Finally, it is well to inspect troops in their working dress and to lay little or no stress on their turn-out. This is a matter which is better dealt with on other occasions.

CHAPTER V.

CHOICE OF GROUND FOR MANŒUVRES.

WE have already in Chapter II given some indications as to the selection of ground on the map. The Staff officer must first consider in what district the manœuvres are to *terminate*. This will be determined either by Army Orders, which require the troops to be in a certain situation at the beginning of Army manœuvres, or by the necessity of sending the troops back to their stations by rail as soon as possible after the end of the last field day.

Beginning with the last day of manœuvres, the Staff officer must now work backwards and select on the map a piece of fresh and suitable ground for each day's scheme. He must take into consideration the strength of the forces to be engaged, their combination as regards the different arms, and the nature of the tasks to be set. Finally, he must take into account the housing of the troops, the length of the marches to, from and during the manœuvres, and the possible necessity for bivouacking.

This being done, a general scheme embodying the situation and the resulting tactical tasks must be worked out with the assistance of the map. The Staff officer must form a clear idea of the various solutions which the tactical problem admits of, and of the probable sequence of events. Should the manœuvres afterwards not develop in the manner intended by the General Officer Commanding, he will then be able to indicate the proper measures to lead them into the required direction. (*See Chapter IX.*)

It is absolutely necessary that the Staff officer must know

the intentions of the General Officer Commanding who is to direct the manœuvres, and must do his best to follow out his line of thought.

It would, for instance, be very injudicious, in the case of the manœuvres of two Divisions against each other, to choose a tract of country of a mountainous character, woodland, or ground covered with thick undergrowth, in which movements of troops off the high roads would be impossible or seriously hampered. In such a case the heads of columns only would come into collision and their action would be limited by the character of the country on either side of the road. Cavalry and Artillery might hardly play any part at all, and the mass of the forces merely be practised in route marching, and not in any kind of fighting exercises. The *debouching* of a large force from a mountain defile in the face of an enemy is quite another matter, and is an operation entailing the deployment for battle of the whole force which is crossing or has crossed the mountainous tract. This can consequently be made the subject of the manœuvres of a large force.

As a rule it is advisable to choose the kind of country which in war generally forms the theatre of battles and operations. Besides, as the latter are generally carried on in countries well provided with good communications and numerous habitations, the choice of this kind of country for manœuvres has the additional advantage of affording facilities for quartering troops and supplying them with their necessary wants. On the other hand, it should be observed that the high state of cultivation and value of land in districts of this description very easily entails heavy compensation for damages to property, or renders it necessary to restrict troops in their movements to such an extent, by constantly creating unreal illustrations of warfare, as to affect seriously the object for which the manœuvres are intended.

Should it be in contemplation to select a district which is well adapted for manœuvres but is so barren and thinly inhabited as to prevent the possibility of billeting the troops, this ground

may be made to answer the purpose by arranging for the troops to bivouac. This procedure has the advantage that on the manœuvre day following a bivouac the Commanding Officers can make their own arrangements as to time of starting, and are in general allowed a freer hand.

A personal reconnaissance of the manœuvre area is best undertaken at a season when the trees are in leaf and the crops sufficiently advanced to make it possible to judge which of them will still be standing when the manœuvres take place. In order not to defer the preparations too late, it will be well to carry out this reconnaissance early, say between the middle of April and the beginning of May. It is best for the Staff officer entrusted with the preparations to make the first visit alone; the General Officer Commanding will not proceed to the ground till the second visit, when matters are more advanced.

At the first visit the Staff officer will examine the ground in the reverse order to that pursued in making out the scheme, and will begin by visiting the first day's ground. This procedure makes it easier to estimate the influence of the ground on the development of the tactical situation. Should it be found that the ground is unsuitable for the scheme or that the latter is improbable in view of the nature of the ground, then the scheme must be altered or re-modelled; but if the ground is altogether impossible—if, for instance, it is covered with miles of sugar-beet fields, intersected with wire fences, and dotted with enclosures which must be placed out of bounds—it will then be necessary to select fresh ground within the limits prescribed for the Divisions.

A decision of this nature is a momentous one and must be carefully considered. The Staff officer here assumes a responsibility from which he is not entirely relieved by the subsequent consent of the General Officer Commanding to the shifting of the ground. Should the Staff officer feel unequal to this responsibility, he will do well to break off his journey and return to headquarters for fresh orders. But even in this case he will do well first to visit the proposed alternative ground in order that he may be able to submit proposals regarding it based on a personal inspection.

During the visit to the ground it is advisable to establish relations with the civil authorities and the inhabitants. A visit to the office of the County Council will do much to facilitate business relations and to save unnecessary correspondence. Landowners, forest officers and farmers will often be able to give valuable information.

The scenes of the projected battles and bivouacs must not be too near large towns or industrial districts, as the inhabitants are apt to turn out *en masse* to look on, and it is then not always possible to clear the ground as directed by F.S. Regus., para. 545. Not only do such crowds interfere with the manœuvres, but they may appreciably increase the bill for damages to crops.

The second visit to the ground is to be carried out before the final arrangements as to billets, &c., are made, not later than June. This is in case the condition of any cultivated or arable land which was left in doubt by the previous visit is found to be such as to require a change of plan.

It is not necessary to traverse every part of the manœuvre ground; it is sufficient to visit the proposed battlefields, outpost lines and bivouacs, in order to take account of the effect which the ground will have on the employment and movements of troops. The larger the masses of troops that are to use the ground, the less use it is to waste time examining individual features. This is sometimes even injurious, since it leads one to form preconceived notions of the tactical result.

To avoid repetition, the general principles underlying reconnaissance of ground in peace or war will be dealt with in Part III of this book,

CHAPTER VI.

MARCHES AND QUARTERS ON THE MARCH.

To quote the Field Service Regulations, "Marching constitutes nine-tenths of the work done by troops in war."

Marches indeed may be looked upon as the *basis* of all operations in war, and battles, on the other hand, as the *end* or *result*. The latter are knit together by the marches into a connected whole. Decisive results depend therefore to an immense extent on the precision with which marches can be accomplished. Troops must arrive on the spot where their action is required at the right time and in fighting condition. This should be practised in peace both as regards arrangement and execution. Consequently there can be no doubt that one very important branch of the training of troops consists in raising the marching powers of large bodies of men to the highest standard of efficiency.

It is not desirable, nor is it indeed necessary, to tax the powers of horse and man in peace time to the utmost limit of physical endurance. The object of practising marching is rather to secure a high *collective* result with the minimum of fatigue to individual men and horses. The first condition for this is the maintenance of the strictest discipline on the line of march, which, however, must be carried out within reasonable limits.

The soldier must march in the strictest military order, but with as much personal comfort as possible. If personal comfort

or ease be allowed to such an extent as to interfere with order, discipline on the march cannot properly be maintained. But, on the other hand, if the idea of order on the line of march be carried to such an extent as to cause, without the slightest object, the greatest discomfort to the soldier, it may simply become unbearable.

If under peace conditions the soldier is occasionally called upon to execute marches requiring severe physical exertion, this is useful in that it strengthens his will-power and enables him to form an idea of the demands which may be made on him in time of war. But even in peace time this severe strain should never be imposed on the soldier as the result of mismanagement or bad Staff work. It must be ordered deliberately and with a given object in view, so that the men, when they have been kept on their legs for hours beyond the usual time, may feel that they have achieved some solid result. This sense of achievement, together with the knowledge that the conduct of the march, including the periods of rest, has been well managed, is of great assistance in overcoming the sensation of physical fatigue. It would be a mistake to suppose that the great majority of the men do not take a keen interest in the object for which they are exerting themselves.

It must be made clear to the Infantry that a march of $12\frac{1}{2}$ to $15\frac{1}{2}$ miles is not the *average* but the *minimum* daily distance which will have to be covered. But to make them realise this the Infantry officers must take as much trouble over route marching as the Cavalry do over long-distance rides.

Marches may be divided into *travelling* and *fighting* marches. In the former the object is to cover a given distance with the least possible fatigue; in the latter, fighting conditions are paramount.

In concentrating troops for autumn manoeuvres travelling marches of several days' duration are unavoidable. As laid down in F.S. Regns., para. 552, the average length of these marches should not exceed 14 miles. Mounted corps may occasionally be called upon to cover distances up to 19 miles, if

the distance between camps or billets renders this necessary. The final march into action, or *fighting march*, must be a short one. This is due to the necessity of assembling large bodies of troops, all marching to manœuvres, at given points; and further to the fact that they will have to march to quarters at the end of the day. In the case of Infantry, this *fighting march* should not exceed 9 miles. For the troops will have been quartered as much as 3 miles away on either side of the line of march, and will have to do another 3 miles away from the line of march at the end of the day.

If several detachments have to pass a certain defile or bridge, on the same day, special orders should be issued fixing the hour at which the head of each column is to arrive at the defile. Similar instructions would have to be given if the troops have to cross a river by a ferry or such like contrivance. The benefit of any advantage should always be given to the detachment which has still the longest march to perform, but the time required by each detachment to pass the defile or bridge must be carefully considered.

When troops have to cross by a ferry—a circumstance which may sometimes occur even in the case of a large force, owing to the absence of bridges—the load the ferry can carry in men, horses and carriages should be previously ascertained, together with the time taken in crossing to and fro.

It is only by taking precautions of this kind that troops are prevented from being ordered to parade at unnecessarily early hours—a proceeding which is justly considered by them to be most annoying, and should always be avoided when possible.

While the arrangement of the travelling marches depends principally on the location of the quarters and the necessity for the avoidance of undue fatigue to the troops, that of the *fighting marches* must be determined by the military situation. But even these marches will be affected by peace-time considerations. Further details will be found in F.S. Regns., paras. 303 to 305. *Fighting marches* are dealt with in Part III of this book.

Quarters.

On the march and during manœuvres the troops may be in billets*, in village bivouacs, or in bivouacs† in the open.

For the comfort of the troops it is desirable that during travelling marches their quarters should not be too close together. But, on the other hand, when large masses of troops are marching on an extended front, the quarters must not be so scattered as to be at considerable distances from the lines of advance. Regard should be had to the idiosyncracies of the various arms; thus, Artillery should be quartered so that they will have good roads to march by, Cavalry should not travel by rocky mountain roads, and Infantry should be quartered as close as possible to their roads so as to shorten the distance they will have to cover. On days of rest the quartering need not be so compact as on marching days.

When troops are constantly billeted in the same villages, as on a main road leading to the manœuvre ground which is constantly traversed by troops, much inconvenience is caused to the inhabitants. Though it may cover the actual cost of the lodging and meals, still the billeting money does not fully compensate for the trouble and expense caused. This is especially the case when, on military grounds, more troops are billeted in a village than, according to the billeting lists, it is supposed to accommodate. It is, therefore, necessary to vary the quartering arrangements as much as possible.

The quarters for two bodies of troops manœuvring against each other must, of course, be made to suit the movements contemplated during the exercises in question according to the "ideas" given out. In the course of a manœuvre of the kind the final positions of the troops engaged may be found to be very different from those contemplated at the outset. But there is no reason whatever why such a state of affairs should be allowed to occur, that is to say, the troops finding themselves

* Either sleeping accommodation only, or billets, including meals.

† Bivouacking signifies making use of the portable tents which are carried by German soldiers.

at the end of their day's work far from the quarters assigned them. It is always possible to alter the "ideas" by sending the troops information of a new kind or issuing fresh instructions in the programme originally given out, and to avoid such an occurrence without, indeed, seriously interfering with the freedom of action of the various Commanders. Still, to draw up schemes for manœuvres and exercises and select quarters for the troops engaged so as to avoid, if possible, any interference of the kind, must be essentially the aim and object of those entrusted with the necessary arrangements.

The military situation, as projected, may render it desirable not to quarter troops in the space between the opposing forces. This will save the troops from having to march back to their own force and then advance again with it. Whether this arrangement is possible depends upon the number of men that the villages can accommodate.

In allotting the billeting area to each corps, and in assigning quarters to the Staff, units should be kept together as far as possible. This facilitates interior economy and the issue of orders.

From a military point of view the limit to the distance to which quarters may be scattered in the various villages depends on the question of bringing troops to the manœuvre ground without causing them unnecessary fatigue. It has already been stated that the maximum distance of quarters from the point of assembly of the troops should not exceed 6 miles in the case of Infantry or $9\frac{1}{2}$ miles in the case of Cavalry and Artillery. In the case of the concentration of very large masses of troops these distances must sometimes be exceeded in certain unavoidable cases, especially when bivouacking, which, under the circumstances, might appear preferable, is objectionable on account of very bad weather. The General Staff officer must, however, not lose sight of the main principle of shortening the distance the troops will have to march to reach the places of assembly, for it should not be forgotten that any fatigue or

exertion that can thereby be spared on the part of men and horses may be turned to account at manœuvres.

If we reckon, for instance, the march from quarters to place of assembly at 5 to 7 miles, fighting march 5 miles, combat 2 to 3 miles, retreat or pursuit 3 to 4 miles, march to new quarters 5 miles, we have a total of 20 to 23 miles; the latter total should not be exceeded. For very hot weather may supervene, which will reduce the marching power of the troops. In arranging for such marches it is well to proceed gradually from easy to more difficult tasks. Thus we may begin with short marches at Brigade manœuvres, and as the men's feet get hardened we may proceed to longer marches for Divisional manœuvres and full marches for Army Corps manœuvres.

The mounted corps may be set rather longer distances to cover, and they may be quartered on the outer limit of the quartering area, except when tactical considerations require them to accompany the advanced guard.

When large bodies of troops have to be quartered it is necessary, in order to take full advantage of the available stable accommodation, to mix mounted and dismounted troops together in the same village. The limit is reached when the discomfort caused to the troops by too closely concentrated quarters begins to make itself felt. But this discomfort does not affect the troops as much as the inhabitants, especially when the former have the advantage of short marches to their places of assembly.

Billeting Laws:

The demands that may be made on the inhabitants in peace time are laid down in the Act of 25th June, 1868, modified and extended by the Act of 21st June, 1887.

Three different kinds of quarters are recognised by law—

Regulation billets, including victuals.

Regulation billets, without victuals.

Close-packed quarters.

The latter term has superseded the old "emergency quarters" and "village camps." As regards the first two varieties of quarters, rules for determining the billeting capacity of each village are embodied in the Act. But no rules are given for close-packed quarters, so these have to be allotted under para. 77 of the 1868 Act, and under the Instructions for carrying out the Act dated 31st December, 1868.

The billeting lists in each district are drawn up by a Civil Committee. An officer may sit on the Committee as military member to watch the interests of the Army. Senior Staff officers of some experience should be chosen for this duty. The military member has no vote, but is only a consultative member. He must not only be a master of the subject, but must exercise great tact in order to influence the Committee to agree to military requirements. This applies especially to the billeting list for close-packed quarters, as there is little in the Act to guide the Committee, and considerable divergence of opinion is not improbable. From the military point of view a building should accommodate as many men as can lie side by side on the floor, or as many horses as can find standing room in the barns and sheds. The troops will readily put up with the hardships of close-packing for a short time if this saves them a long march to better billets; but the civil population are put to great inconvenience for small remuneration; indeed, this method of quartering may necessitate the complete suspension of agricultural operations. It will require great tact on the part of the Staff officer to decide fairly between these conflicting interests and to admit fully the just demands of the inhabitants without sacrificing the interests of the Army.

Billeting lists are often five to ten years out of date. The General Officer Commanding should therefore communicate with the civil authorities some time beforehand, and arrange with them the order in which the Billeting Committees are to visit the villages in the manœuvre area assigned to the Army Corps. The districts next on the roster for manœuvres should, of course, be taken first.

It may happen that the accommodation provided by the civil billeting list is insufficient for the proposed operations, and that the civil authorities decline to extend it. In such cases it will be necessary to require the civil authorities, under Appendix A of the Act, to provide a certain proportion of close-packed quarters. In Prussia the maximum quota of close-packed quarters to be provided by each village is fixed by the civil billeting list. But even when the civil authorities allow this quota to be exceeded, it may be impossible to find room for large bodies of troops when concentrated in a small area, as at Army Corps or Imperial manœuvres. In such a case it is necessary to order part of the troops to bivouac. It must here be remembered that a bivouac is more expensive than billets; but since bivouacking has to be practised as a military operation, it will be well to take advantage of cases in which quarters are not available to practise bivouacking.

Bivouacking in the immediate neighbourhood of a village affords an approximation to war conditions. It is not, however, quite the same thing, since the troops are not allowed to enter houses, stables and gardens (F.S. Regns., para. 670). In the interests of the service training of the men it will be well to give up the idea of a great general bivouac and allow each portion of the force to bivouac in turn, except on days of rest. The bivouac allowance (F.S. Regns., para. 566) will then be divided equally among the units. Troops should not bivouac on the night preceding or following a day of rest, nor as a rule on the day preceding the commencement of a fresh set of manœuvres, or of a change in the military situation.

If there are to be 4 days of brigade manœuvres, 4 days of Divisional manœuvres and 2 days of Army Corps manœuvres, and that 3 Sundays or days of rest fall between these 10 working days, this leaves 5 nights available for bivouacking in the open or in villages. The bivouac allowance amounts to $4\frac{1}{3}$ bivouacs for each man on marching-out strength. (This allowance is considerably reduced for the Brigade and Divisional manœuvres of corps which are to attend Emperor's

manœuvres.) It follows that billeting will be obligatory for only two-fifteenths of the whole strength of the force; this of course does not prevent a larger percentage from billeting one day and a lesser one the next, according to the accommodation available. If it be desired to have at least one day of general bivouac, then on two other nights one-fifth of the troops who would otherwise bivouac may be billeted. It is desirable to let the mounted troops bivouac fewer nights than the Infantry, since they carry no shelter-tents (F.S. Regns., para. 598).

It will readily be admitted that even in the most thinly inhabited districts, and even at Army Corps or Imperial manœuvres, it will be possible to find at least close-packed quarters for this proportion of two-fifteenths to one-fifth of the strength of the force, without having recourse to distant villages or villages beyond the outpost line. This procedure renders it possible to hold manœuvres in barren country, and so to avoid damages to crops, which now a days form a heavy item.

When troops were billeted in the old style, without reference to tactical considerations, then all military operations other than the day's work—such as night attacks, surprises and so forth—used to fall upon the outposts alone, it was not uncommon to find troops billeted, *under peace conditions*, in neighbouring villages, listening to a battle beginning at the outpost line as if it did not concern them! But when troops are quartered and bivouacked in battle formation, then such an attempt on the outpost line sets the whole body of troops, back to the most distant quarter, in motion. Commanding Officers of all ranks are practised in the difficult art of making arrangements to meet a sudden attack; they must neither fatigue their troops by turning them out prematurely or without adequate reason, nor must they be late in turning out and so contribute to the defeat of their force.

When this "service" system of quartering and bivouacking is adopted, the Commanders on both sides may be left free to choose their own means for effecting the object in view.

Even the hour at which troops are to turn out may be left to them. This procedure enables manœuvres to be conducted under conditions approximating to those which will prevail in war.

It is hardly necessary to say that *emergency quarters*, which will be close-packed quarters, must be arranged for all troops bivouacking in case of very bad weather. (F.S. Regns., para. 601.) If the number of troops is very large, as at Army Corps manœuvres, the distance to the furthest quarters may be so great that some of the troops will prefer to bivouac in spite of the weather rather than march long distances to reach close-packed quarters. For emergency quarters the numbers fixed by the civil billeting list must not be exceeded without the consent of the civil authorities.

Under ordinary circumstances the number of men that are to be billeted in each village will be published beforehand by the civil authorities in official circulars. But if the authorities will consent to refrain from publishing the numbers that are to occupy close-packed quarters, then, if the "service" system of quartering and bivouacking be adopted, the published numbers will give no clue to the movements of the force. For the only figures communicated to the civil authorities for publication will be the numbers to occupy billets on Sundays and days of rest. It is quite impossible to maintain absolute secrecy regarding the billeting arrangements, nor is this necessary, for the foregoing precautions will be quite sufficient to leave the intentions of the General Officer Commanding in doubt. In many cases it will even be possible to allow the publication of the projected close-packed quarters; this will make for the convenience of the inhabitants.

The list of ration dépôts for the manœuvres must in any case be communicated to the troops, but the situation of these dépôts need not necessarily give away the proposed course of the manœuvres.

Moreover, some confidence must be placed in the self-reliance and sound judgment of the Commanding Officers, and they must

be trusted to base their dispositions on the military situation and not upon any vague information which may be derived from published arrangements for billets and supplies.

In making out the billeting and supply scheme for the march and for manœuvres, it is advisable to use copies of the map on which the capacity of each village as regards billets and close-packed quarters is inserted under the names. This gives a general idea of the quarters at a glance, and allows the troops to be moved about on the map so as to arrive at the most advantageous distribution.

From the map thus prepared the *billeting scheme* is made out. For short marches and for small bodies of troops this may well be combined with the *marching scheme*. Separate schemes must be made out for each body of troops and for each village. Each such scheme must show the number of officers, men and horses quartered on each village, and the individual schemes must agree with the general scheme for the whole force. This detailed billeting scheme will form the basis of the ensuing negotiations with the civil authorities. A specimen scheme is given in the Appendix to the 1898 Billeting Act.

Should the scheme submitted to the civil authorities involve occupation of certain villages in excess of their authorised capacity, the reasons for such excess must be stated, and alternative schemes must be prepared in case such excess occupation is not sanctioned.

When the sanction of the civil authorities to the billeting scheme has been obtained, they will communicate it to the inhabitants, while the military authorities will issue the necessary instructions to each body of troops. These latter are held responsible that they inform the village authorities, at least eight days before their arrival, of the exact numbers to be quartered. Any subsequent alterations must be communicated at least 24 hours before arrival; if any alterations are necessary at the last moment the billet-masters must be informed.

No information regarding close-packed quarters need be given to the troops beforehand, but the days on which they are to

bivouac should be notified. It is convenient to issue the list of supply dépôts at the same time.

Any other instructions that may be necessary should be embodied in a Programme of Manœuvres issued to the troops. Nothing is laid down as to the form of such programme, but it should be as short as possible, since the general instructions for manœuvres are already given in F.S. Regns.

CHAPTER VII.

SUPPLIES, BIVOUAC REQUISITES AND TRANSPORT.

As soon as the scheme of manœuvres is so far settled that no material alterations are to be expected, the General Staff Officer, in consultation with the Supply Officer, must work out the arrangements for supply, bivouac requisites and transport.

Victuals are supplied either by the inhabitants on whom the troops are quartered, or from supply depôts, or occasionally—as when troops are quartered in empty barracks—by purchase by the troops.

The first description of supply is governed by the Billeting Act of 1898 and the Instructions for its Application, by Army Orders, 1898, and by the Supply Regulations. But it is as well to agree beforehand with the civil authorities as to what supplies will be demanded, as the inhabitants, however willing they may be, are often unable to comply with all requisitions. This is especially the case in the country. For instance, it is often difficult to obtain a sufficient supply of oats for a large number of horses. If the harvest has been a bad one, such a demand may be very hard on the villagers.*

When troops are billeted in villages up to the limit of their capacity, and when they remain for any time, it often happens that the parish authorities, representing the inhabitants, decline to undertake the victualling of the troops. If the civil authorities

* The inconveniences to which the civil population are subjected during manœuvres principally affect the inhabitants of small towns and the agricultural population. Large towns are not inconvenienced to any great extent. It is the more necessary for the Army to show the greatest consideration for agricultural interests.

refuse to reconsider this decision, supply dépôts will have to be organised. The great objection to this is the delay in drawing and cooking the rations when the men come in tired from manoeuvres, since the host is only obliged to supply fuel and facilities for cooking. This system is, moreover, most objectionable as leading to difficulties of all kinds with the inhabitants, who are doubly inconvenienced by the quartering of troops on them, since they receive no remuneration for supplying victuals. Every endeavour should be made to get the inhabitants to undertake to feed the men.

On bivouac days, or in emergency quarters, rations are issued from supply dépôts.

It is occasionally convenient to hand over the ration money to the troops and let them make their own arrangements. This applies especially to the day of return from manoeuvres; it can then be left to units to decide whether they will have their meal at the railway station before entraining or on arrival in barracks; whether they will provide rations by private purchase or draw them from the Intendance.

When more than 4,000 men are to entrain at one railway station it may be advisable to provide a travelling field kitchen (Supply Regulations, 1898).

Under special circumstances it may be necessary to pay the ration money direct to the men. This will be the case when Cavalry patrols or cyclists are to be despatched to a distance, as their own unit will then be unable to feed them.

Detailed instructions for supply of food and forage will be found in the Supply Regulations.

In order to train the men in field cooking it is advisable not to issue tinned meat to troops in bivouac, as this requires no cooking. They should rather be practised in cooking fresh meat. This, however, according to the skill of the men, takes some time to do, so that the men who are to go on outpost duty and have no time for cooking had better receive tinned meat.

It will depend on the amount of fresh meat consumed whether a field slaughter-house is to be organised. If only a small quantity is used it is better to buy butchers' meat.

Mincing machines taken into the field by the troops have been found of great assistance in preparing fresh meat.

The Supply Department will arrange for the provision at the dépôts of rations and bivouac requisites, as straw and firewood. The necessary instructions to the Intendance will be issued by the General Staff.

Supply dépôts will be located in accordance with the manœuvre scheme, except when existing dépôts are used. They should be situated close to a railway station, or, failing this, close to a canal or high road. Troops who are to draw supplies from a dépôt must not be quartered too far away, otherwise the ration party will have to arrive at the dépôt on the day before issue. The number of dépôts to be provided depends upon the manœuvre scheme. If sufficient Intendance officials are not available to take charge of the dépôts, the War Office must be asked to attach officers from other commands.

The Officer Commanding Supply Dépôt is responsible for the loading of all supply wagons. The officer told off to command the column of wagons is responsible for the discipline of his men, but will not interfere with the work of the dépôt. He does not take over command of the wagons till they are loaded.

Unless the Intendance hire the draught animals beforehand they will have to depend on transport requisitioned from the civil authorities. Hiring is on all accounts to be preferred, especially as having to provide transport at harvest time is very hard on the farmer (War Office circular, 28th July, 1900).

Dépôts for the supply of permanent manœuvre grounds are organised in the same way, but in this case, although the supply authorities are responsible for issue, the troops have to provide transport. Infantry use transport hired or requisitioned by themselves; mounted troops have to horse their own wagons.

To save unnecessary expense it is as well not to order hired or requisitioned transport to be ready at an unnecessarily early hour. If the supply authorities have the stores all ready for issue, it should not take more than three hours to load up the supplies for an Infantry Division. Allowing three hours' drive

to the proposed bivouac, it will be sufficient to have the wagons ready at the dépôt by 8 A.M. This presupposes that the troops are clear of the village where the dépôt is by that hour, or, which is preferable, that they do not march through that village at all.

In case a whole army transport train is available for manœuvres, this should be organised in military transport columns (F.S. Regns., para. 650), loaded according to regulation. This method of supplying the troops is the quickest and least liable to breakdowns; but most of the existing transport trains are required for Imperial manœuvres, which now take place every year. And, moreover, the fuel and straw required for bivouacs cannot be loaded on the service ration-vans, but have to be carried in farmers' hay wagons.

As everyone should know, it is impossible in war time to carry fuel, straw, potatoes and such bulky goods with the troops. This would unduly increase the length of the transport columns. These supplies are obtainable on service in most villages. It is therefore permissible to accumulate such supplies before manœuvres, at the projected bivouacs, and to issue them to the troops on the ground. But in order to prevent the troops from drawing conclusions as to the result of the day's fight from the presence of such supplies, they must be kept loaded on wagons, which must be parked under cover at some distance to one side of the projected battlefield. If this measure of secrecy is considered insufficient, the wagons may be kept ready at the nearest supply dépôt, and there handed over to the troops to march with the baggage. This will practise Commanding Officers in issuing orders for their baggage trains, which they will have to do on service, so that they never get in the way of the troops and yet always arrive in good time.

But in any case it is advisable for the troops to carry one day's supplies with them, so that they can begin cooking their meal as soon as they reach the bivouac. As soon as the wagons from the supply dépôt arrive the supplies expended are to be replenished.

At Army Corps manœuvres single corps, such as Cavalry

Divisions, may be rendered more mobile by giving them provision vans to carry their rations and hired or requisitioned farmers' wagons for their forage. These conveyances will accompany the troops, carrying one day's supplies. The troops will then be quartered, or bivouac, according to the military situation, finding their own supplies. The wagons, having unloaded their day's supply, will proceed next morning to the nearest railway station, as directed in manœuvre orders of the previous evening, to replenish. They will there find a day's supply, ordered by telegraph from the nearest dépôt by the Officer Commanding Supplies. These supplies will be in trucks ready for issue, the wood ready cut up. As soon as the wagons are refilled they will rejoin their corps, travelling with the baggage. To carry out this system it is necessary that the manœuvre area should be in a district traversed by railways; arrangements must be made beforehand with the railway authorities, and the stations must be reconnoitred to see that sidings accessible to the transport columns are available.

But although the supply arrangements should be as perfect as possible, it must not be hastily assumed that the main feature of the manœuvre scheme is the punctual arrival of supply wagons. This would rarely be possible in war, especially after a battle. Accordingly, even at small manœuvres, delays in the arrival of baggage and supplies must be foreseen. If the transport columns march under service conditions—that is, at a proper interval in rear of the fighting line—they will often fail to arrive before dark.

Expense may often be saved by contracting for the purchase of wood, straw and potatoes by the troops at the bivouac, instead of purchasing large quantities beforehand and storing them at the dépôts. This will save transport expenses, and will save the provision of stores in excess of actual requirements. But if this method be adopted it is necessary to make certain beforehand that the supplies will be available in the district in question. In most districts there will be no difficulty in this respect at minor manœuvres. The system constitutes a good education for the

Regimental Staff officers who will be sent ahead of the troops to obtain supplies. But the general situation of the bivouacs must be communicated to the troops in good time, in order that the different villages where supplies are to be purchased may be allotted to units beforehand. This system will help to compensate the villages nearest to the bivouacs for the inconveniences to which they will be put, such as having to find shelter for horses and using up all the water in their wells. Surplus wood, or straw still fit for use, may be re-sold to the vendors at a fair rate, instead of the trifle which would be realised if it were put up to auction.

During Army Corps and Imperial manoeuvres the supply of firewood, &c., locally available will often be insufficient, and arrangements must be made beforehand to meet demands.

Finally, it should be noted that F.S. Regns., para. 664, sanction the requisitioning of water carts in very hot weather, of carts to carry knapsacks (para. 665,) and of sick transport.

CHAPTER VIII.

SANITATION, HOSPITALS AND PRISONS.

THE precautions necessary to keep the troops in health during the manœuvres are detailed in F.S. Regns., paras. 662 to 667.

For Army Corps and Imperial manœuvres each Brigade should have at least one four-horse ambulance with stretchers and one pharmacy wagon. The medical authorities should ascertain, through the civil authorities, whether there are any cases of infectious disease, or, more especially, epidemic disease in the manœuvre area, and should report the same to the General. To save delay it is advisable, in urgent cases, for the parish doctors to communicate directly with the manœuvre staff. The same applies to the local veterinary surgeons with respect to diseases of horses or cattle. On the receipt of such reports the General Staff may have to arrange for the necessary alteration in the billeting scheme. This should be done in consultation (by telegraph if necessary) with the civil authorities. Where only an isolated case of disease is reported, it will often suffice to keep the troops clear of that house and the surrounding enclosure. Contagious disease does not exclude the possibility of billeting in a village, provided that proper measures for isolation are observed. The Quartermasters sent on 24 hours in advance (even for emergency quarters they will arrive some hours before the troops) must inquire of the local authorities whether any infectious disease exists. If so, they must inform their Commanding Officers as soon as possible; in any case this must be reported to the Commanding Officer before the troops enter the village.

Railways, by enabling the sick that can be moved to be sent back to the nearest garrison hospitals, have considerably reduced the necessity for establishing field hospitals during manœuvres. These, however, cannot be entirely dispensed with, being required to meet cases of sudden sickness too severe to allow of the patient's travelling by rail. For such emergencies the local hospitals, such as are to be found in all large villages, may be utilised. Inquiries as to the existence of such hospitals must be made through the civil authorities and the information communicated to the troops. But if there are no civil hospitals in the manœuvre district, or none available, then field hospitals must be organised.

The location of such hospitals is governed by the principles which apply to the location of supply depôts, and is decided by the General Staff in consultation with the Medical Department and the Intendance. A field hospital must be near a railway station, to facilitate the transfer of patients, as they become fit to travel, to a garrison hospital. It is very desirable that the field hospital should be at a place where there is a local doctor to take charge of any patients that may be left behind when the field hospital is broken up.

Every parish is compelled by law to take charge of soldiers who are sick and unfit to travel, and to provide them with proper medical attendance. The expense so incurred is recovered through the Intendance.

Terms of imprisonment awarded to men during the manœuvre period can often be postponed until the corps or regiment concerned returns to its garrison. When cases occur in which such a proceeding would be prejudicial to military order and discipline, or when men awaiting trial have to be removed, the prisoners must be sent to military prisons. The only necessary arrangements are then, precautions for the proper custody of prisoners when billeted on the march or when delayed for any considerable time at railway stations. The latter circumstance should be avoided as much as possible by making proper arrangements beforehand.

The best way of meeting the requirements of the kind is by making use of civil prisons or police stations. It is generally desirable to issue directions on this subject to the troops, and hence the necessary inquiries must be made beforehand. For the rest, the custody and temporary detention of prisoners, either in billets or bivouacs, must devolve on the corps or regiments to which they belong. When removed from such, special instructions have to be issued on the subject.

CHAPTER IX.

MANŒUVRE SCHEMES AND CONDUCT OF MANŒUVRES.

THE preparation of the manœuvre scheme has in part been discussed in Chapters II and V. Even after the ground has been reconnoitred, the scheme still remains a project, of which the details are not to be worked out till the Director of the manœuvres has accepted it. His sanction is also required to the detailed scheme, since in working this out local conditions and other considerations may have to be taken into account, the effect of which was not foreseen when the scheme was outlined. It may also occur that during the course of the preparations changes of personnel may take place among the troops and their Commanders, or that higher military authorities require some special manœuvre to be carried out on a particular day, which requires a modification of the scheme.

The first condition to be observed in drawing up schemes for manœuvres is simplicity, and it should be always borne in mind that the end and object of all manœuvres is to train the Army in peace for war.

To ensure that the manœuvre scheme, both in outline and in detail, is completely in accordance with the wishes of the Director of the manœuvres, the General Staff officer must discuss the scheme fully with him, to avoid any possible misunderstanding. Should any difference of opinion arise, the Staff officer must cheerfully accept the General's decision and must remember that the General, not himself, is the person responsible for the training of the troops.

The principal object of manœuvres is the training of the senior Commanders. The tasks set in pursuance of the "general idea" should therefore be such as not to curtail the freedom of the Commanders, but to leave room for the exercise of independent decision. The opposing forces, whether Regiments, Brigades or Divisions, should be considered as subordinate, but, in a sense, independent portions of a larger force, so that the supposed existence of the main body does not necessarily affect the immediate *tactical* situation.

It is not advisable, for instance, to make one force the advanced guard of one Army and the other force the rear guard of another, or to make both forces flank guards of two meeting Armies; for in such a case each Commander would be directly subordinate to the General Officer Commanding main body, whose orders he must obey implicitly. It is not the object of manœuvres to create such a situation, and it would lead to an artificial and unreal situation if it were attempted to replace by a permanent "general idea" the sequence of reports and orders which would actually take place between the Commander of the force and his General Officer Commanding.

On the other hand, a necessary element of the general idea is the supposed existence, outside the manœuvre area, of two Armies whose action more or less affects the *strategical* situation of the two opposing forces.

This supposition leaves the Director of the manœuvres free to alter the situation, in a natural manner, by reinforcing either side, and it gives the Commanders some training in elementary strategy as affecting the solution of the tactical problem with which they are immediately concerned. Elaborate strategical problems are suitable for Staff rides and war games, but are out of place at manœuvres.

The special idea cannot always contain a definite challenge to both sides to decide the question at once by seeking a general engagement; and even were this so, it would be still possible to take a different view, from which it might appear more advantageous to one side to avoid an engagement into which it

perhaps could not be drawn. It is nevertheless extremely desirable, for the sake of affording further instruction both to Generals and troops, that the few days which are available for manœuvres may be turned to account in the practice of the actual combat.

Movements of troops at the free discretion of the Commander, far out of reach of the enemy, may be practised almost as well and far more cheaply in a Staff ride over the ground, or even in a room on a map; but the leading and handling of troops in action is an exceedingly difficult art, in which it is hardly possible to attain perfection, and no opportunity of practising it should be neglected.

Should the plan of operations adopted by either side be such as to lead to the avoidance of a combat, the Director of the manœuvres will usually intervene, and will assign to the combatants such motives as will oblige them to join battle. It is for the Director to consider how far such intervention is in accordance with the "special idea," and to clear away, at the final conference, any misconceptions arising out of his action.

Such an intervention on the part of the Director must always be considered a last resource, and the manœuvres would bear a closer resemblance to war if allowed to take their natural course as determined by the plans of the Commanders.

But at manœuvres peace-time conditions are paramount, and must often limit the application of rules which would hold good on active service.

Thus, at manœuvres the physique and morale of the troops, to say nothing of their training, armament and equipment, are equal on both sides. There is no actual fire effect, and movements of troops are often carried out without due regard to the enemy's fire. The latter point especially renders it most difficult to give a correct decision as to the result of the fight. However hard Umpires and Commanding Officers may work, it is impossible altogether to check this neglect of the enemy's fire, or to ascertain to what extent it has, often unconsciously, been carried. The directing officers will often have to admit privately

that in actual war the result of the fight would have been very different to that arrived at on the manœuvre ground.

The difficulty in reconciling manœuvre conditions with service conditions is increased by the fact that the movements of troops are limited to a prescribed area of ground. They must proceed in a given general direction, and must often start and finish at prescribed points.

The Director will often be obliged, under peace conditions, to fix the hour at which hostilities are to commence, or at least to order that troops are not to pass certain limits before a given hour. This enables the Directing Staff to ensure that the encounter shall take place on a certain area of ground, selected as suitable for instruction. In the interests of the training of the troops it will often be necessary to depart from the sound precept that the manœuvres should be allowed to take their normal course in pursuance of the plans of the Commanders. For these plans if carried out, may lead the troops on to ground where the cost of damage to crops would be heavy, or where so much ground might be out of bounds as to prevent the deployment of the troops. Similarly, peace-time conditions may unexpectedly prevent the troops from occupying certain villages or traversing certain pieces of ground, and thereby place one side or the other at a disadvantage.

In time of peace the interests of the soldier as regards quartering and supplies cannot be allowed to over-ride the interests of the inhabitants, as would be the case on service. Bivouacking is restricted by considerations of expense, and the troops have often to be quartered in distant villages; this entails long marches to reach the ground, which unavoidably affect tactical dispositions.

In real war, moreover, we are not likely to have a series of engagements, each fought out to a finish, between the same bodies of troops. But at manœuvres allowance must be made for unreal conditions, and all ranks must remember that manœuvres can only give a representation of war, which falls far short of reality.

Though these essential shortcomings of manœuvres cannot be

remedied, their evil effect will be mitigated if the Director, at the conference, is careful to explain the difference between the conditions prevailing at manœuvres and those to be expected in war, so that no false conclusions may be drawn from the results actually arrived at.

The General Staff officer, in making out the manœuvre scheme, must be prepared for the effect of unreal conditions on the conduct of operations, so that he is not taken by surprise if these afterwards lead to unreal results. In this connection it is of especial importance to provide carefully for *adjusting the respective strength of the opposed forces*. By such adjustment it is possible for the Director to exercise the necessary influence on the development of the military situation.

This may be effected by transferring complete units from one force to another, by raising certain units of one force to war strength, by skeleton troops and by neutral troops.

The first method, moving units to the opposite side, is simple, but is difficult to bring into harmony with the military situation. It is often subject to drawbacks which it is impossible completely to remedy. Even if such troops are temporarily declared neutral and marched out of the sphere of operations, the game has still to be played with the cards on the table; and when troops are transferred from one side to the other, they carry with them the knowledge of their former Commander's dispositions.

The second method, raising units to war strength, reduces the strength of a side on paper but not in reality. It reduces the number of units by increasing their strength. No Commanding Officer or Umpire could seriously pretend that a battalion of 1,000 men is only half as strong as two of 500. (This is not an argument against raising units on *both* sides to war strength, which is occasionally advisable for instructional purposes.)

The use of skeleton or flagged troops is not open to the above drawbacks. They are easily extemporised, without sensibly affecting the strength of the troops, and they necessitate no changes in the billeting arrangements. On the other hand,

their fire effect is not sufficiently manifest, and it is more difficult for the adversary to locate them and to estimate their strength than would be the case in reality. This evil may be mitigated by arranging for skeleton troops not to make their appearance till the decisive moment. They may be kept in reserve, or used to threaten the enemy's flank; the Director will then consider that the object has been attained if the skeleton troops are brought into action at the proper time and the proper place. But if flagged troops are made to fight a regular action, then the representation of real war will not improbably become a caricature.

Yet another means of adjusting the strength of the opposing forces is by the use of *neutral troops*. These troops are stationed at a given point, under the immediate orders of the Director; he can throw them into the fight on one side or the other, so as to alter the relative strength of the forces, and so as to create unexpected situations which oblige the Commanders to make up their minds quickly and bring out the initiative of all ranks. But even this method is open to objections. It is difficult to keep the neutral troops concealed, and the projected surprise as often as not fails to come off, which spoils the whole scheme of the engagement.

The General Staff officer must therefore consider beforehand which method of adjusting the strength of the forces will be most suitable for application on each day. No definite rules can here be laid down, as so much depends upon the tactical situation and on the nature of the ground.

It must further be borne in mind that unforeseen developments of the situation may occur which will oblige the Director to readjust the strength of the forces, and this contingency must be provided for beforehand.

We have already referred to the effect upon the billeting scheme of the tactical idea. We will merely add that the location of the quarters should be such as to enable troops to cover their front by regular outposts. When troops are billeted this ideal can

rarely be completely attained. Efforts should be made to avoid billeting in villages in front of the outpost line, and the quartering area should if possible be shifted so far backwards or sideways as to be outside of the sphere of outpost operations. If this is impossible, then villages in and near the outpost line must be declared to be in a state of war and troops quartered therein must provide for their own safety in combination with the outpost troops. Finally, in very exceptional cases such villages may be declared neutral. Whichever method is adopted, the arrangements should be such that the troops can move from their billets to their fighting formation behind the outpost line unobserved by the enemy. This is almost impossible when troops are quartered in villages in front of the outpost line, or on a level with it to a flank.

It is also desirable to leave the villages in or near the outpost line clear of troops for another reason, namely, that they may be available as "emergency quarters" should necessity arise.

If a day of rest occurs during a manœuvre period, the outposts should be in their places by daybreak on the following morning, so that the day's fighting may commence under service conditions. The arrangements made must be such that the advanced troops and outposts do not have to march unduly long distances to get into position.

The hour at which hostilities are to commence can only be left to Commanders in cases where the whole of the troops are bivouacked or quartered under Service conditions, and even so it must be remembered that if a Commander chooses to commence operations in the dark and so convert the combat into a night attack, this may defeat the intentions of the Director. The same considerations apply to the commencement of operations on a very foggy morning. In war it is usual for the entire operations of large bodies of troops to cease when darkness sets in. (Remember Wellington's prayer for "night or Blücher!") Only outposts and small bodies of troops remain active and the minor operations attempted are usually of the nature of surprises. If a

Commander feels strong enough to risk a decisive battle, he will be wiser to choose the daytime, which permits of the use of the rifle, a clear view of the situation and the ordered movement of troops.

Still, after a decisive battle darkness should not arrest the unremitting pursuit of the beaten enemy. This is not a case of a combat against an equal adversary, but against a disorganised mass of men without leaders, whom a pursuit by night will reduce to utter rout. But such a situation cannot be illustrated at manœuvres, and is therefore not to be taken into account.

On the other hand, much instruction may be gained from an early start leading up to an attack at dawn, or from a sudden return march before daylight for the purpose of administering a check to a pursuing enemy. The Director need not hesitate to sanction such operations, provided that the dispositions of both sides are such as not to entail an encounter of the main bodies in the dark.

On the first day of manœuvres, provided that the opposing forces are more than a day's march apart, the hour of starting may be left to the Commanders. This presupposes that the troops have outposts out, that they are quartered conveniently for the commencement of operations, and that the Director attaches no special importance to the encounter taking place on any particular piece of ground.

If only a small proportion of the troops are in bivouac, the rest being in quarters under peace conditions, then very early starts, even if in harmony with the tactical situation, must be disallowed, as the troops would not have time enough to leave their quarters and get into fighting formation; and if the tactical situation does not specially require an early start, it is well to remember that the earlier the day's work is begun the earlier it will be over, and the troops may have to wait long hours in bivouac or quarters before their rations arrive. If in such cases the Commanders propose to start at an early hour, it is well for the Director to intervene in the interests of men and horses and postpone the commencement of hostilities till later. This does not,

however, apply to the outposts, who may be left free to carry out any operations required by the tactical situation, such as keeping touch with the enemy (F.S. Regns., paras. 595 to 597).

But if both sides are in scattered billets under peace conditions, as, for instance, after a day of rest, then the hour for the commencement of operations should invariably be fixed by the Director. This will apply both to the main forces and to outposts and reconnoitring parties.

In preparing the scheme for the day following a day of rest, the General Staff officer must therefore so arrange that the outposts and patrols have time to get to their places without requiring any part of the troops to make a very early start from distant billets. The despatch of reconnoitring patrols must be so timed, with reference to the distance separating the two forces, that by the time they get into contact with the enemy they find him already in fighting formation, and have then reached a sufficient distance in advance of their own force. The further apart the two forces are, the more chance will the Cavalry have of reconnoitring properly, and the fuller and earlier will be the information sent back to the Commanders. The importance of this point with reference to the service-like conduct of manœuvres is sufficiently obvious.

It is especially important to supervise closely the orders issued by each Commander, both as to form and substance. The instructions for framing orders are given in F.S. Regns., paras. 53 and 54, and are further discussed in Part III of this book. Any deviation from these instructions must be fully explained and justified at the conference.

Should a Commander issue orders, based on a mis-apprehension of the situation, which are likely to defeat the object of manœuvres, the Director should give such additional information, within the limits of the general idea, as may serve to set matters right. But if the effect of such mistaken orders will not be prejudicial to the instructions of the troops, they may be allowed to stand, as the Commander may learn wisdom from the failure of his plans.

It may occur that a Commander, in order not to commit

himself, only gives general orders for next morning, merely directing the troops to assemble and to march in a given direction. Such orders are frequently justified, and would be the rule rather than the exception in war. This leaves the Director rather in the dark as to the way the situation will work out. But it has the great advantage of obliging the Commander to issue his further orders "from his saddle," as he would have to do on service. This is better than issuing elaborate orders which may prove impossible to carry out.

The Director should not require the orders for the rest day to be handed in too early, especially since outpost and reconnaissance reports may not be sent in till late. It will be sufficient if the Director receives the orders between 10 P.M. and midnight. But if the Commander can submit an appreciation of the situation earlier, so much the better; this should not, however, be insisted upon.

In order that the Director may be kept constantly informed of the intentions of the Commanders, it is permissible for him to attach an Intelligence Officer to the staff of each, so that he may receive early news of all that is going on. He will thus be able to meet unexpected developments more readily than if only informed of them by the tedious process of calling for reports. At the same time the Commanders will be relieved of the worry of reporting all their dispositions to the Director, and can devote their whole attention to the operations. This of course does not excuse them from the duty of making proper service reports to their (imaginary) General Officers Commanding, which reports are handed in to the Director.

Not only the orders of the Commanders but the decisions of the Umpires (F.S. Regns., 614 to 635) may affect the result of the day's operations. Should these decisions bring about a result inconsistent with the object of the manœuvres, the Director may intervene as Chief Umpire and alter the decisions. This is sometimes unavoidable at manœuvres on a large scale, where, owing to conflicting decisions of different Umpires along an extended line of battle, an impossible state of things may come

to pass. But such intervention should be looked upon as a last resource.

The place at which the Director should take his station during manœuvres depends upon the schemes, the nature of the ground, and the dispositions of the Commanders. The General Staff officer must be well informed as to all that is going on, and must be able at any moment to indicate to his General the best place for seeing the fight. It is also his duty to arrange that the Commanders, Umpires and Intelligence Officers are kept constantly informed as to the whereabouts of the General, in order that messages may not go astray, and that there may be no delay in summoning officers to the conference.

Should an impossible tactical situation ensue during a field day, the "stand fast" must be ordered. This may be necessary if, owing to the absence of Umpires, the troops have become involved in a hand to hand fight, requiring them to be separated before operations can continue.

Pursuit.

This cannot be practised in peace time. It would presuppose a disorganisation of the defeated side, the loss of most of their leaders, and a disorderly crowding together of beaten troops. But in peace time the destructive effect of the enemy's fire is not felt, and the defeated side remain completely organised and at full strength. At manœuvres, as soon as the combat is decided, the opposing forces must be separated, and this completes one stage of the operations. The defeated side are then given a start, so as to get clear of the enemy, and this constitutes a fresh tactical situation. The Director will require the winning Commander to submit his measures for the pursuit as they would have been carried out had the fight continued, but these measures will not be put into execution, but only indicated. Similarly, the defeated Commander will submit his measures for retreat.

The time at which the field day is to conclude, and the tactical situation then existing, must be foreseen by the directing staff. If necessary, these matters should be adjusted by the adroit intervention of the Staff, so that at the end of the day the troops

are placed conveniently with regard to the billets which have been prepared for them. On the last day the troops must be so placed at the end of the fight as to arrive in good time at the stations from which they are to be railed to their garrisons.

The General Staff officer must keep notes of all comments made by the Director during the manœuvres, as materials for the Director's address at the final conference. He must see that every day the scheme for the next day's operations, except in cases where this follows naturally from the existing situation, is forwarded in good time to the Commanders. When a change of command occurs, he must see that the Commander taking over receives the proper orders and information. It is part of his duty to issue all necessary instructions concerning bivouac requisites, baggage, situation of emergency quarters and similar matters, as well as daily orders for the interior economy of the force.

At the end of the manœuvres, on the last day, a mass of troops will be crowded into a confined space. The Directing Staff must arrange beforehand for these troops to move off the ground to the railway stations or to their quarters. Troops whose trains start first should of course have the precedence. Mounted corps move off at a trot, so as to leave the roads clear for the Infantry. It will facilitate de-concentration if the baggage is despatched to the railway stations or to billets, as the case may be, during the day's manœuvres.

Schemes for the Army Medical Corps.

All the Medical Officers not actually employed in attending sick troops should be practised daily in medical duties in the field, including the organisation of first aid stations and field dressing stations, as laid down in F.S. Regns., paras. 465 to 475. To be able to carry out their duties efficiently, the Medical Officers must be acquainted with the tactical situation and with the intentions of the Commander. The Senior Medical Officer of each force will ride with the Staff of the Director in order to keep in touch with the situation, and will submit to the Director his plans for the (marked or imaginary) dressing stations which he proposes

to organise. These stations will be notified to the troops and will be marked by ambulances and red-cross flags.

It is frequently objected that fights at manœuvres are rushed so quickly that there is no time to bring up ambulances and organise dressing stations. There is, however, not much force in this contention, since the field medical organisation will work much more smoothly than can be the case on service. Even the smallest real fight will not be decided without a few casualties, and it is just this art of getting the dressing stations to the right place in the shortest possible time that Medical Officers must practise in peace time. On service the difficulty will be increased by the fact that situations for dressing stations cannot be reconnoitred beforehand; the stations must be formed wherever they are required by the course of the fight, and when a dressing station is in full activity, crowded with wounded, it is no easy matter to move it.

All these points, which are further referred to in Part III, Chapters II and VIII of this book, the Senior Medical Officer must discuss on the spot with his subordinates. The Director may or may not have time to go fully into questions of medical organisation at his conference; but if he is able to do so, this will be desirable in the interests of the instruction of all branches of the service.

For the Army Medical Corps the study of the organisation required by actual tactical conditions will form a most valuable addition to the instruction afforded by the Army Medical war games and Staff rides which have of late years been introduced.

It will be seen from the foregoing that the duties of the Staff officer told off to assist the Director of manœuvres are both varied and onerous; they require bodily and mental activity, an intimate knowledge of the work, and, above all, tact. They afford training in a wide range of subjects, and an opportunity of acquiring much experience which may be useful to the Staff officer when his own General takes command of a Division or of an Army Corps.

As regards this last point, the duties of an officer on the Staff of a General Officer Commanding are much the same at manœuvres as in war. This branch of the subject will be further considered in Part III ; but it is necessary to bear in mind that at manœuvres the military measures which would be adopted in war are cramped and curtailed by the exigencies of peace, which, if not respected, would cause great inconvenience to the troops, the inhabitants, and not impossibly to the Directing Staff.

CHAPTER X.

RAILWAYS AND STEAMERS.

ARMY Orders of 26th May, 1904, provide for the transport of troops to and from manœuvres and practice camps by rail and steamer. This requires the sanction of Army Headquarters, which may be accorded if the cost does not exceed the cost of marching, or if valuable time for the training of troops is thereby saved.

It is not, however, justifiable to expend the greater part of the funds set aside for the expenses of military training upon such transport, and the possibility of its employment is therefore limited.

Rail and steamer transport is applied for under Transport Regulations, para. 31, F.S. Regns., para. 540, sanctions the return of troops to their stations after manœuvres by rail, and this proviso is generally taken advantage of for the return conveyance of the Infantry and Staff. In this case requisitions for railway transport are submitted to the Railway Section of the Army Staff, which makes the necessary arrangements with the railway authorities.

The number of troops to be transported by rail at the end of manœuvres is often very large, and considerable difficulties have to be overcome in making the necessary preparations.

The greater the number of stations at which troops can entrain, the more quickly will they be despatched. Next in importance is the number of available sidings, loading docks and other railway facilities. Generally speaking it will be found possible to despatch troop trains at intervals of one hour, but this is

dependent on the regular time table, since neither express trains nor passenger trains may be interfered with. The difficulties are much increased if the railway is only a single line, since a number of empty troop trains have then to return on the same line of rails.

In war time, when the ordinary time table is suspended, the transport of large masses of troops is easier. It then often happens that a single railway company is unable to provide sufficient rolling-stock, and this is then requisitioned from other companies.

To facilitate the work of the railway employés, the troops must arrive punctually at the places where they are to unload transport and prepare for entraining. Horses and baggage must be loaded up in good time, in order to enable the trains to be made up properly. When masses of troops are to be transported, delays in the despatch of trains cannot possibly be allowed; these would check the whole of the traffic, and possibly lead to accidents. If therefore any troops are not ready to entrain at the prescribed time, they must stand aside and follow by an extra train after all the others have started.

The General Staff officer must place himself in communication with the railway authorities beforehand, and ascertain the hour by which the troops must be ready to begin loading baggage from the transport wagons into the train in order that the whole of them may reach their garrisons the same evening. If only a single line of rail is available, and if this already carries a heavy traffic, it will be necessary to billet a part of the troops and entrain them next day; but this is undesirable, on the score of the extra expense. The only alternative in such cases would be to begin entraining early on the morning of the last day, which would spoil the last day's manœuvres. It will not usually be possible, after a big field day, to begin entraining before noon, for at the end of the day the troops are often 4 to 8 miles from their departure station, and they should under ordinary circumstances arrive at the station at least an hour before the train starts.

Suitable camping grounds should be selected close to the

departure stations, where the troops can rest and cook their food before starting. It is necessary that the departure sidings should be conveniently accessible from these camps. The railway authorities rightly object to marching troops across the main line.

When large masses of troops have to be transported by train, as, for instance, after Imperial manœuvres, this constitutes a most difficult task for the railway authorities. This operation, if carried through without a hitch, speaks highly for the fitness of the railway staff to deal with the emergencies of war.

It will be instructive to give a few instances of what has actually been effected in the way of entraining troops after Imperial manœuvres.

In 1897, between the afternoon of 10th September and the morning of the 11th, a total time of 20 hours, 83,000 men, a large number of horses and wagons, and a quantity of baggage were despatched from Frankfort-on-the-Main and the surrounding district. Several railways were here available, and the troops were able to entrain at 18 stations. The number of railway wagons required was 3,300.

An impromptu but none the less excellent performance was achieved by the railway authorities in 1899 at the end of the Imperial manœuvres. On the night of the 10th September, three days before the date fixed for the return of the troops, the Director of manœuvres expressed a wish for the troops to return to their garrisons on the 13th, or twenty-four hours sooner than had been arranged. The despatch of the troops by train went off without the smallest hitch. This performance is the more remarkable, since three different railway companies took part in it. By midnight on the 13th the bulk of the troops had been despatched, with the exception of 13 troop trains to be sent off next morning; that is to say, under exceptionally difficult circumstances, 57,000 men, 2,842 horses and 160 wagons were despatched in 60 trains, all within 20 hours.

After the Imperial manœuvres in 1903, the railway section of the General Staff, in consultation with the authorities of the

different railways, had to send off a large number of troops in a short time.

For the despatch of the four Army Corps, eleven stations were available. There was plenty of rolling-stock, but at eight of the stations ramps had to be erected for loading horses and wagons, and at one station it was even necessary to shift the rails. The passenger traffic was not in any way interfered with, but goods traffic was suspended. On the last day of manœuvres the whole of the Infantry of the four Army Corps, $87\frac{1}{2}$ battalions in all, with their Staffs, were entrained. The only troops left over to the following day were the balloon and telegraph sections and some of the mounted units. Fifty-seven trains were required, which carried 2,270 officers, 54,105 men, 3,271 horses, 217 wagons and 6,051 tons of baggage.

On this occasion a difficulty arose: the manœuvres did not end in the district intended by the Directing Staff, as the plans had to be changed within twenty-four hours of the end, in consequence of orders from superior authority. Accordingly several of the battalions which were to have entrained first could not reach their departure stations in time, and had to be billeted till next morning.

The railway authorities usually arrange for a few extra trains to run at the end of the movement of troops in order to meet such emergencies as the above. This has the advantage of avoiding any disturbance of the time table; for if any units fail to arrive in time for the earlier trains, these trains are simply withdrawn and the units wait for the extra trains. This may be inconvenient for the units in question, but they must put up with it in the interests of the public service, for nothing is more liable to disturb the safe working of a great scheme of railway conveyance than sudden and arbitrary alterations in the time table.

Transport by Steamer.

This is occasionally useful to save marching or to supplement railway transport. Troops stationed on one of the great rivers

may often advantageously travel to their manœuvre ground or return from it by water.

River passenger steamers may be hired from the owners. The number of persons they can carry is usually fixed by law and cannot be exceeded; the more so that a fully equipped soldier takes up more space than a Sunday excursionist. The passenger steamers plying on the great rivers will usually accommodate 400 to 600 persons, those to be found on small rivers usually carry 200.

Steamers may also be used as tugs, like locomotives on a railway; they are capable of towing a large number of men in lighters.

River steamers are rarely capable of carrying a number of horses; they are generally only fit to accommodate Infantry and a small number of chargers. The mounted troops must travel by road, or, in exceptional cases, by rail.

Sea Transport.

At Imperial manœuvres combined naval and military schemes may be carried out involving the landing of a large body of troops; for this service the great liners and cargo steamers may be utilised.

According to the duty required of them, these hired transports are classed as :—

Troopships, for the transport of complete units of troops with their equipment and supplies.

Horse transports, for the conveyance of a number of horses with their forage and the necessary number of attendants.

Store ships, for baggage and stores.

Special ships, which, according to requirements, may be fitted as colliers, hospital ships, or for other purposes.

Merchant ships differ very much in build, speed, capacity and draught of water; it is therefore important to select those most suitable for the special purpose in view.

The first point to be considered is the length of the passage. Two nights on board is technically called a short voyage; ten

nights, an ordinary voyage, and anything over this a long voyage. It is obvious that for a short voyage a ship may be able to carry twice as many men as for an ordinary voyage. Moreover, it is possible, by fitting extra berth decks, to materially increase the accommodation. But the fitting of such decks, even if preparations be made beforehand, takes considerable time.

The capacity of the space below deck is measured in gross registered tons (one registered ton is about 100 cubic feet). The usual allowance is 2 tons for a man or 4 for a horse. A steamship of 3,000 gross registered tons would therefore carry only 1,500 men or 750 horses.

The speed of a ship is expressed in knots per hour, a knot being equal to a geographical mile. It is not advisable to select ships whose speed is less than 10 knots.

The steamers most suitable for troop ships are large passenger or emigrant ships, which have three continuous decks. Cargo ships are less suitable, since troop decks have to be fitted. The German mercantile marine now possesses enough great liners to transport a very large body of troops.

Infantry officers' chargers will mostly accompany their regiments; being few in number, they can be carried in horse boxes on deck.

To carry a number of horses, horse fittings must be erected. These are of an elaborate nature, and consist of stalls with padded breast boards and breech boards, slings, and other special fittings.

Store ships usually require no extra fittings; hospital ships have to be fitted specially.

It will not be possible to transport any of the troops on the ships of war; not only is there no room for them on board, but they would interfere with the fighting efficiency of the ship.

When a large body of troops have to undertake an "ordinary" voyage or "long" voyage, it is better to hire a few large ships than a number of small ones. The large ships are steadier, carry more coal, and afford room to move about on deck.

Embarking troops on our own shores, where piers, landing

stages, barges, horse flats, and cranes are available, should be an easy matter if proper preparations are made beforehand; but it requires knowledge and practice if the embarkation is to go off without a hitch. The process of embarking men is similar to that of entraining. Getting horses and wagons on board takes much longer, especially if they cannot be embarked from piers over gangways. Gangways can be used up to an inclination of 35 degrees. 100 horses take about $5\frac{1}{2}$ hours to embark with one crane; 100 wagons take 7 hours. Much depends on the nature of the means of embarking, which may be from barges, horse flats, or rafts.

Guns and wagons are stowed in the hold. All stores, &c., which will be required immediately on arrival must be stowed on the top; that is, they must be put on board last. This is sometimes difficult to manage, but it is absolutely necessary in order that the troops shall be ready for action as soon as landed.

Since on mobilisation the Army and the Navy will possibly both be hiring ships at the same time, this service is performed by one department, that of Sea Transport. In peace time this department undertakes the inspection of all steamers of the merchant marine suitable for use as troop ships and store ships, and makes all arrangements with the dockyards for fittings, equipment and loading plans. The steamers are all surveyed beforehand and registered in the department; their tonnage and capacity is accurately known, and the measurements, plans and working drawings for fitting them out are all prepared. On the outbreak of war the selected ships are equipped and fitted out for the transport of men, horses or stores according to the pre-arranged plans. The same department undertakes the arrangements for loading and embarkation. To avoid delays due to divided command, it is necessary that no one else, not even the military commanders, should interfere.

The ships start in the order in which the troops are to land; it is desirable to send a fast steamer ahead with the Staff entrusted with the duty of preparing the disembarkation. During the voyage the discipline on board is regulated by special orders.

Disembarkation will be under the orders of the Commander of the joint land and sea forces. The details are supervised by the Staff and special troops sent on in the first ship, who have to arrange for the provision of landing stages, lighters and cranes, as well as for quarters for the troops and for store rooms. This will be the post of the General Staff officer in charge of disembarkation, and his duties will be similar to those of the General Staff officer sent on ahead to the concentration area of a field Army in a war on land. Further details will be found in Chapter XII.

Landing troops on a beach becomes a very difficult operation when no piers, landing stages or other conveniences are available except such as can be extemporised by the invading expedition. Under such circumstances it is necessary that each ship should be fully equipped with landing stores such as sheers, landing stages and troop boats, so as not to be dependent on other ships. It is inadvisable to convey all such gear on special ships, since these may arrive late or be separated from the fleet.

Disembarkation under fire is an operation dependent on tactical considerations, which are discussed in Part III, Chapter IX, "Combined Action of Land and Sea Forces in War."

CHAPTER XI.

SPECIAL MANŒUVRES.

Cavalry.

CAVALRY manœuvres (F.S. Regns., paras. 565 to 568) are usually carried out on the permanent manœuvre grounds, since, for reasons of economy, it is rarely possible to assign to them a sufficiently large area in the open country. It is necessary for the proper conduct of these manœuvres that a large space of ground should be available, such as is to be found on our principal manœuvre grounds. Most of these grounds offer a sufficient variety of instructive country.

The main object of such manœuvres is the training of the troops and their leaders in the action of the Cavalry Division. They must learn to bring their forces quickly to bear at decisive points as indicated by the tactical situation, and then and there to push home a vigorous attack; for this is the only way in which decisive results can be attained in war.

To practise the duties of Cavalry when working in front of an Army a large area of ground must be available, not less than three days' marches in extent. Such exercises, combined with the strategical reconnaissance of a country, are usually carried out as the preliminary stage of Imperial manœuvres. Unfortunately sufficient time to carry out this exercise properly is rarely available, and the reconnaissance and other work has to be curtailed. It is never possible to carry out these exercises under Service conditions; for it is impossible in peace even to indicate a state of war, when military necessities override all other considerations. Telegraph lines would be cut, newspapers

forbidden to publish information, stringent measures taken to prevent interference by the inhabitants, and other steps taken which are out of the question in peace time.

It is therefore necessary to discuss in detail all such military measures as cannot be practised in peace time at Cavalry tours and war games, and so to supplement to some extent the deficiencies of Cavalry manœuvres.

When two Cavalry Divisions are concentrated at a manœuvre ground, these may be worked not only in opposition to one another but in combination. It is highly inadvisable to attempt to *drill* such a mass of troops together; the General Officer Commanding will get the best results by working the two Divisions side by side, seeing that they are in the right places at the right time, pointing out the objective to each, and taking steps to secure proper combination as regards place and time in their joint attack.

Heavy Artillery.

Exercises in the attack of entrenched positions by the Infantry in combination with the Heavy Artillery of the Field Army are governed by special regulations. Much information on this subject is to be found in F.S. Regus., and in the training regulations of the Infantry, Field Artillery and Heavy Artillery.

The Heavy Artillery does not take any part till the Divisional or Army Corps manœuvres commence, since this arm is not usually attached to a smaller force than a Brigade of all arms. If the heavy batteries do not take part in the manœuvres, their field training is carried out, to save expense, on the permanent manœuvre ground. If other troops are to take part in their field firing, this will be specially ordered. The field firing of Heavy Artillery gives a great deal of trouble, on account of the large area behind the targets that has to be cleared. There is also the uncertainty as to whether the results obtained will permit of the practice being concluded on the first day, in the ensuing night, or on the following day. This is inconvenient in view of the billeting arrangements for the troops.

Ammunition Supply.

This should occasionally be practised, as there is rarely sufficient time to do this thoroughly at manœuvres.

These special exercises serve not only to train the troops and their leaders in all branches of their duty, but also offer opportunities for carrying out experiments, collecting data and testing projected alterations in the regulations.

Combined Manœuvres.

Besides the regular autumn manœuvres, combined manœuvres of the three arms should be carried out at other times of the year. A most instructive form of Infantry training are manœuvres at war strength, especially when combined with field firing. The possibility of carrying out such manœuvres in the open country depends upon the nature of the ground and the probable cost of damage to crops.

At conferences Commanding Officers must on no account express disapproval of the Service regulations; still less may they deliberately disobey them; but they must constantly bear in mind the possibility of amending the regulations so as to keep pace with improvements in military weapons and equipment: the more attention is devoted to these matters in our Army, the sounder and the clearer will be our views.

CHAPTER XII.

COMBINED WORK OF THE ARMY AND NAVY IN PEACE TIME.

IN the early days of the Fleet, when it belonged to Prussia alone, it was under the orders of the Minister for War, but since the rise of the German Empire both the Army and Navy have greatly increased, and the war training of each is so widely different that it has become impossible to direct both Services from the same office; but both are under the orders of H.I.M. the Emperor, which ensures that the training of the Army and of the Navy will be conducted on the same lines, namely, with a view to fit them for their duties in war.

Our Navy has grown mightily and is still growing. It is now capable of fighting in concert with the Army, and of contributing in no small measure to the efficient defence of the country. In such a case the duty of the Navy will be principally strategical, but, under certain circumstances, it may have to fight in direct combination with the Army.

It is therefore necessary that in peace time both services should acquire a general knowledge of each other's weapons and methods of using them. Just as in the Army the combined action of the three arms and the proper division of work between them are essential to success, so the combination of land and sea forces can only be effective if they understand one another's ways and work like brothers, not like half-hearted allies.

To some extent the two services already work together in peace time. This is the case as regards the enlistment of sailors by the military administrative circles, the joint action of the Admiralty, the War Office and the General Staff of the Army on mobilisation, the defence of our coasts and so forth. But these

joint duties are of little assistance in making the Services better acquainted with one another, since they affect but a small number of officers of each branch.

Something has been effected in this direction by the practice, recently introduced, of appointing naval officers to the Army Staff, and *vice versa*; of detailing joint committees of naval and military officers; and of selecting officers to attend the manoeuvres of the sister service. But much more than this is required to instil into all ranks of the Army and of the Navy the necessity for combined action and mutual support in war.

In the Army the regulations and text books are open to all, with the exception of those dealing with a few special subjects. Further, all military matters are freely discussed in current Service literature; the Navy are therefore fortunate in being able to make themselves acquainted with matters relating to the Army.

The converse is unfortunately not the case. The battle tactics of the Navy remained for years in the experimental stage, since they are intimately connected with the constantly progressing sciences of ship-building and gun-making. And when they had at last assumed definite shape, it was not considered wise to publish our hard-won experience for the benefit of all nations.

Generally speaking, the leading principle of naval battle tactics is to utilise to the fullest extent the numerous powerful long-range guns of the ships, and to secure effective fire at the earliest possible moment.

Many other naval questions are still in process of solution, such as the substitution of liquid fuel for the bulky coal hitherto carried, the replacement of steam engines by internal combustion engines, the use of steam turbines, and the general introduction of wireless telegraphy.

Modern naval literature covers but a small field; the naval history of the last wars has not yet been written; the attention of naval officers has been engrossed by more pressing questions. Recently naval lectures have been instituted at the Military

College, and naval officers have very kindly undertaken to lecture on the construction and armament of battleships before the Military Society of Berlin. But mere theoretical acquaintance with facts is not knowledge; this is only to be acquired by personal experience and the practical application of what one has learnt. Therefore it is to be hoped that the system of sending naval officers to military manœuvres, and *vice versa*, will become still more general, and that we may occasionally carry out combined naval and military manœuvres, to include the landing of large bodies of troops.

The first manœuvres of this nature took place in 1890. On this occasion the ships joined in the battle on land, both by their fire and by landing a portion of their crews. But this would rarely occur in war; a landing would be effected by an organised military expedition accompanying the naval force in transports.

Any great scheme of despatching troops oversea is dependent on one fundamental necessity, and that is, that the Navy shall have already secured complete command of the sea. In the present state of naval tactics it would appear a most hazardous proceeding to send the whole fleet to protect the landing flotilla, leaving the enemy with the command of the high seas. (See Part III, Chapter X.)

Combined manœuvres of the Army and Navy will therefore be limited to the landing of troops, covered by the fire of the fleet, on the supposition that the command of the sea has already been established. In a war with a Continental nation the landing of troops on a large scale would be the exception. But in a war with a transpontine power the only means of subduing it would be to fight the enemy on his own ground.

A manœuvre scheme comprising the landing of troops on an open beach is liable to be interrupted or delayed by bad weather, which prevents the landing from being carried out on the day fixed. The scheme should therefore be so framed that it will be possible, in case of bad weather, to effect the landing in a sheltered harbour.

As regards the Navy, the instruction to be derived from such

combined manœuvres is somewhat limited, being confined to tactical support of the landing force. But, on the other hand, a large number of naval and military officers will be brought into contact with each other during the joint preliminary reconnaissance, the preparations for landing, the landing and re-embarkation, and, most important of all, both services will for the time be under a single Commander, and will have to work together to carry out his orders.

Combined naval and military manœuvres are upon a higher plane than exercises involving merely the unopposed landing of troops. And should Germany at any future time have to send large bodies of men overseas, such preparations will then be found of inestimable value.

PART III.

DUTIES OF THE GENERAL STAFF IN WAR.

CHAPTER I.

ORGANISATION FOR WAR AND DISTRIBUTION OF TROOPS.

THE composition of the German Army is given in its War organisation. The latter was originally based on the "ordre de bataille," but is now mainly intended to show the *general distribution of the troops and the arrangements for command and administration.* It therefore merely indicates the *normal fighting formations.*

The necessity of dividing an Army into smaller units, and of sub-dividing these again, became manifest as soon as regular Armies began to be organised. However closely combatants may be concentrated, only a limited number can be directly commanded by one General. Any increase in this number necessitates the formation of sub-divisions capable of being directly commanded by one man and for certain purposes even a further sub-division is necessary.

It is very interesting to follow the history of the development of these principles as shown in their gradual effect on the composition of Armies. But this would lead us beyond

the scope of the present work. We must be content to limit ourselves to the present day, and seek to deduce from an examination of military organisation based on modern warfare the considerations which should have weight in regulating the formation of an Army at the present time.

There are many points to be considered in such an examination. The employment of troops in battle and the best means of moving them on the line of march and bringing them to the battlefield are the first in importance. In immediate connection with this comes the question of certainty and precision in the transmission of orders. Questions of supply, clothing, arms and equipment and medical-matters—all, in fact, that we are accustomed to class under the general heading of "Military Administration"—are matters for secondary consideration.

As a necessary consequence of the conditions of modern warfare, the order in which an Army now engages in battle changes constantly. Special distributions of troops must therefore be made for special purposes and must be varied to suit conditions of time and place.

By this we do not mean to infer that the War organisation which fixes the permanent organisation of an Army for war is incompatible with any special distribution. The latter is a development of the former, and it is desirable in arranging such to deviate as little as possible from the War organisation. Otherwise the accustomed channel by which orders and instructions are issued is interrupted, which makes effective command difficult and upsets the administrative arrangements on which the efficiency of the troops depends.

It is therefore often better not to change the composition of the units of an Army if it is in any way consistent with the attainment of the particular objectives in view at the moment, even if this composition may not be the ideal one for the purpose.

It is equally important that any special formations required should be effected without seriously disturbing the normal arrangements for command and administration of the organisa-

tion for war, and that, *vice versa*, the organisation for war should itself be such as to meet the requirements of modern warfare, and should include a distribution suited to the majority of cases, or should at least facilitate such a distribution. If we further take into account considerations of movements and supply and the accurate transmission of orders, we can clearly see how important to every Army in the field must be the judicious selection of its organisation for war; and it is for war that Armies should be organised in peace.

The best peace distribution of an Army would be one which would ensure its passing at once to its war organisation. But in practice we find that many modifications are necessitated by the requirements of peace. The question how far such requirements justify us in deviating in peace from the organisation adopted for war, must henceforth be a subject for more serious consideration than ever, because of the increasing rapidity with which troops can now be taken from their garrisons, formed into Divisions and Army Corps, and at once sent to the very battlefield. No measure should therefore be neglected which would have the effect of facilitating their transfer from a peace to a war footing.

We have next to consider the principles which should be borne in mind in the formation and composition of a *large* Army. The formation of small Armies need not be discussed, for in undertakings of importance they are usually united to larger Armies, and all that is to be desired is that their organisation should facilitate this union.

The forces in the field of a great Continental military power are formed into several sub-divisions which are styled "*Armies*." The strength and composition of these "*Armies*" cannot be determined beforehand, as the particular circumstances under which war begins vary extremely, and may be influenced by the position of allied Armies, by the attitude of States which, for the time being, remain neutral, as well as by the strength and position of the enemy's forces

The first question to be considered then is into how many units an "Army" should be divided.

It may be laid down as a general principle that the Army should, in the first instance, be divided into *as many* units as practicable, in order to avoid the necessity for further sub-division. The maximum to be fixed depends on the consideration that one General can only direct efficiently a certain number of subordinates. What this number is can hardly be determined by theory. Experience, however, gives us a guide, and the conclusion that has been arrived at is that if an Army be divided into more than eight different units (six Army Corps and two Cavalry Divisions, for instance), its leader will find enormous difficulties in exercising a strict and uniform control.

Let us now look on the Army as a collection of tactical units, that is to say, as consisting of a certain number of battalions squadrons and batteries (taking into account the three principal arms only, viz., Infantry, Cavalry and Artillery). In arranging the organisation, the first point to be considered is whether we should begin with the Infantry and divide it into equal parts, assigning to each its due proportion of Cavalry and Artillery, or whether we should form separate units, consisting either entirely or partly of the two last-named arms.

The renaissance of the German Cavalry in the war of 1870-71, as an arm capable of independently reconnoitring far in advance and of screening from the enemy the movements of its own Armies, makes it unnecessary to demonstrate that an Army must comprise independent bodies consisting exclusively of Cavalry and Horse Artillery. The only question is: of what strength should these bodies be, and how should they be organised?

In the campaign of 1866 the Prussian Field Army had a *Cavalry Corps* of two Divisions, which was generally placed under one of the Generals commanding Armies, and only

occasionally received its orders direct from the Commander-in-Chief.

The result was not satisfactory, but this was not due so much to the organisation of the Cavalry in corps as to its faulty strategic and tactical employment. In the war of 1870-71 no Cavalry Corps was employed, but several independent Cavalry Divisions were formed and placed directly under the orders of Commanders of Armies. This arrangement was justified in most cases in view of the condition of the French Cavalry at that time; still cases occurred where the organisation of larger masses of Cavalry in units would have made it possible to attain better results.

When the squadrons engaged on the strategic reconnaissance in front of the Army are allotted absolutely distinct duties and objectives, which require an advance on a very broad front, the Cavalry Divisions can be most efficiently employed as independent units. To put them directly under the command of a Cavalry General whose duties could be perfectly well performed by the Commander of the Army would be merely to create a useless intermediary. On the other hand, when several large bodies of Cavalry are moving in the same direction and are engaged in the same task they may, with advantage, be placed under the orders of one man, in order that the enemy's Cavalry may be driven off by a timely concentration of force at the decisive point and the general situation cleared up.

Very large masses of Cavalry should also be organised as a complete unit to enable them to act decisively on the battlefield and to pursue a beaten enemy. They can then be distributed in successive lines and work together on a broad front, so as to be able not only to ride down hostile detachments, but also to break through into the middle of the enemy's forces, and at the same time to be in a position to keep off any hostile Cavalry who might wish to interfere. Should these masses of Cavalry succeed in interrupting the enemy's communications or in cutting him off when he is retiring, they may bring about his complete destruction. The German Cavalry in 1870-71 let

many opportunities slip of obtaining great results in this way.

Of course no attempt must be made to keep these large bodies of Cavalry marching for any length of time on a single road, nor to subject them altogether to the control of one man; but when it is intended to gain some decisive result at a point which has been indicated by headquarters, either during the reconnaissance, or in a battle, or in the enemy's rear, the Cavalry Divisions which have been marching on different roads should be temporarily placed under the control of a Senior Cavalry General. When they have carried out their common duty there is nothing to prevent the different Cavalry Divisions being given distinct objectives and becoming once more independent.

The most effective method therefore appears to be, not to arrange for the organisation of a Cavalry Corps beforehand, but to allot to the various Armies sufficient Staffs for the larger Cavalry units.

In arranging for the composition of a Cavalry Division, its efficiency as a fighting unit on the battlefield and its duties in the strategic reconnaissance must be considered. Its establishment, organisation, and a suitable provision of Artillery must be thought out, and the necessity of attaching Engineers to carry out demolitions debated.

The Cavalry Division in the German Army consists, as a general rule, of three Brigades. A Brigade consists of two regiments each of four squadrons.

This formation and strength suit the two chief duties that a Cavalry Division is called upon to perform in war, that is to say, first, to act as a distinct fighting force on the battlefield, and secondly, as a unit of an Army, in scouting and reconnaissance. To act in the former capacity a large force of Cavalry should be tactically divided in three lines, and thus the three Brigades fulfil this condition without any further arrangement.

The principle of distribution in lines must not, however, be considered inviolable. A Commander has the right to dis-

tribute his Division for battle in the way he considers most suitable in the circumstances.

It has been universally recognised as unpractical to arrange in the War organisation for an Infantry detachment, carried in carts, to be permanently attached to a Cavalry Division, for there is scarcely any duty which the latter have to carry out on service which could not be as well performed by dismounted Cavalry as by a small Infantry detachment. The difficulty of finding a sufficient number of suitable vehicles (ten men per cart) in an enemy's country for the transport of the Infantry has also to be considered.

On the other hand, an Infantry detachment *temporarily* attached to a Cavalry Division for a specific purpose (for example, to block a defile), may render very valuable services. But if Infantry are attached for long to Cavalry they either become a drag upon them and injure their efficiency, or they must be left to look after themselves.*

The addition of machine-gun detachments, which can follow the Cavalry anywhere, and are horsed and equipped by Horse Artillery, appears more to the point. They will often be able to save Cavalry the necessity of dismounting, and may be usefully employed in battle to surprise the enemy's flanks and rear.

Artillery should be attached to a Cavalry Division both when employed on reconnoitring duty and as a fighting force on the field of battle; in the former case to overcome the resistance which might be offered by small detachments of all arms, or to cover the retreat of the Cavalry if pressed, and in the latter to make a rapid but *effective* preparation for the charge. The only question that remains is, then, of what strength should the force of Artillery be? The minimum force of Artillery to be assigned to a Cavalry Division of six regiments is a battery; as a maximum, never more than three batteries, that is to say, a battery to each Brigade. But it is evident

* According to their organisation for war, the Austrians attach rifle battalions, and the French cyclist companies to their Cavalry Divisions.

that with only one battery per Division, the action of the Cavalry would often be undesirably limited. Consequently a Brigade (three batteries) is undoubtedly the right thing. This is enough to meet every possible requirement. It entails, in the first place, a diminution of the work required from each battery, and, secondly, in the event of battle, the Artillery can play an effective part in the fighting.

An Engineer detachment about forty strong, provided with all the necessary apparatus for demolitions carried in a tool cart, should form part of a Cavalry Division, the *personnel* riding in requisitioned carts. Apart from the considerations which have been discussed in dealing with the question of infantry carried in carts, it would appear to be of advantage that a sufficient number of Engineers should be trained to ride, so that they could carry out demolitions under a mounted Engineer officer.

The above arguments lead to the conclusion that the Cavalry should be organised in independent Divisions placed directly under the orders of Commanders of Armies, and that these Divisions should consist of three Brigades, each of two regiments; that Infantry should not be permanently attached to these Divisions, but that they should have an Artillery Brigade of two or three horse batteries and a small detachment of Engineers.

There are many opinions as to the best organisation for a Cavalry Division. In France out of eight Cavalry Divisions, two have six, three have five and three have four regiments.

In the Austrian, Russian and Italian Armies the principle of organising the Division in two, instead of three, Brigades seems to be preferred. In these Armies a Cavalry Division consists of two Brigades of two regiments each, and each of the latter of six squadrons. But it must be evident that with such an organisation the Brigade is only of minor importance. In fact both on scouting duties as well as when drawing up the Division for the charge in three lines on the field of battle one Brigade must, at any rate, be split up. On the other hand there are undeniable advantages in dividing a Division

into four regiments. Modern Cavalry tactics require a very strong first line. Now, by dividing the Division into three parts, the first line is, as a rule, no stronger than the second or third, whereas by dividing it into four parts the first line may consist of half the Division, and is then strong enough to form its own supporting squadrons and small flanking parties, and leave the second and third lines intact, and, consequently, more efficient as manœuvring bodies. Besides, after the first contact, one-fourth of the Division might not be forthcoming—which will often be the case—and the Divisions would then be reduced to three fractions. But were it organised in three fractions it would be reduced to two.

In Austria and Italy supply columns are added to the Divisions.*

Many in the German Army consequently favour the division of a Cavalry Division in four fractions. Proposals have indeed been made to increase the Division by an additional (or seventh) regiment, so that the first line might consist of a Brigade of three regiments. This is practically, in so many words, admitting the superiority of the four-fraction system.

The number of Cavalry Divisions that can be formed depends on the number of Cavalry Regiments remaining available after a regiment has been deducted for each Infantry Division to act as Divisional Cavalry. The necessity of this arrangement will be considered in detail further on.

Now, according to the peace organisation of the German Army,† only the Guard Corps is in a position to attach the requisite Cavalry to its Infantry Divisions and form in addition a Cavalry Division of six regiments, the remaining Army Corps having only from two to four regiments available for the latter purpose. It follows, therefore, that the formation of Cavalry Divisions cannot be a question to be settled by Generals commanding Army Corps. The formation of Cavalry Divisions

* In Italy the regiments consist of six squadrons, and are divided into two wings each of three squadrons.

† France has a peace establishment of 8, Austria 5 and Russia 22 Cavalry Divisions (in the latter country four are formed into two Cavalry corps, each of two Cavalry Divisions).

for war must then be specially laid down in the war organisation.

If it be agreed that the various and important strategical and tactical duties which will fall to Cavalry in future wars can only be successfully carried out by a very strong force of Cavalry, and in some cases only by Cavalry in large masses, a comparison between the German Cavalry and that of other Great Powers will show the inadequacy of the former. This must call forth a demand in Germany for a corresponding increase in this arm. It is necessary for Germany to employ so much Cavalry in front of her Armies that there is not sufficient left for duty with the Armies themselves.

The desire to increase this arm is the more justified as, on the one hand, the losses which Cavalry sustain in the course of a campaign cannot be replaced from reserves of equally effective men, as they can be to some extent in the other arms, and on the other hand, the waste in horseflesh is very great. The requirements of the Artillery and transport are less exacting, and it is easier to supply their wants than to provide serviceable troop horses, *i.e.*, those which are thoroughly broken and in hard condition. Unbroken horses are of little practical use, for they soon succumb to the demands made on them.

In considering these points the question which has been so often asked must be debated: Is the existing peace organisation of the German Cavalry on the right lines, or if not should the greater part of the Cavalry be organised in Cavalry Divisions formed in peace, as is done by other Great Powers? There can be no doubt that the latter arrangement simplifies preparation for war, but the Cavalry itself, the other arms too, and more especially the higher Commanders, would lose much if the intimate relations between the three arms were destroyed, owing to the present system of attaching Cavalry to Army Corps and Infantry Divisions being discontinued. The same considerations have weight to-day as those which caused the abolition, after the unfortunate war of 1806-07, of the Infantry and Cavalry "*inspec-*

tions," which had existed till then, and replaced them by mixed Divisions composed of the two arms.

Perhaps a way out of the difficulty may be found by some such arrangement as the following :—"Four Cavalry Brigades consisting of ten Cavalry Regiments should be allotted to every two of the sixteen Prussian Army Corps of the Line, so that they would be able to form eight Cavalry Divisions and still let each Infantry Division have a regiment of Divisional Cavalry. Each group of ten regiments should have a Cavalry Inspector, who should form, with his own Staff, the Staff of the Cavalry Division on mobilisation. The training of the Cavalry up to the end of the regimental training should be carried out under the direction and supervision of the Commanders of Infantry Divisions and Army Corps. The Brigade training and higher training should be carried out by the Inspector. A different Cavalry Regiment will be attached yearly to each Infantry Division for training with other arms, so that the regiments will get this training every two or three years. The remaining regiments will train in Brigades and Divisions. Cavalry Brigades could be attached to single Infantry Divisions as independent Cavalry for the manœuvres, or the whole Cavalry Division could be allotted to one of the two Army Corps when it is carrying out corps manœuvres."

The increase in the Prussian Cavalry necessitated by some such re-organisation as this should be brought about by raising regiments of five squadrons.

This increase should in the first place be used for the benefit of the Infantry Divisions, which have not enough Cavalry at present, and in some cases have mere skeleton squadrons. Experience shows that an Infantry Division requires a Cavalry regiment of four squadrons, and in order that these squadrons should be kept up to the necessary standard the peace establishment of the regiment should be five squadrons. The organisation of the rest of the German Cavalry should be regulated in a similar manner. The armament and equipment of all the Cavalry must be uniform, in order not to limit its field of utility, but instructions might be issued allotting Light Cavalry Regiments to the Infantry

Divisions in war. In any case the present organisation is only a makeshift and gives cause for serious thought.

The above remarks about Cavalry apply equally to Artillery. The point to be specially considered is, whether large masses of Artillery should be formed and placed under the immediate orders of Generals commanding Armies.

In the campaign of 1866 the III and IV Prussian Corps did not take the field as Army Corps, but the 5th, 6th, 7th and 8th Divisions belonging to them were placed under the direct orders of the General commanding the First Army, and the surplus Artillery of the III and IV Army Corps, had they been formed, was combined into an "Army Artillery Reserve." The body thus formed proved to be one difficult to find quarters for, and unwieldy both on the line of march and in battle. It was never possible to employ it as a whole so as to obtain an effect commensurate with the number of batteries of which it consisted and this has always been found to be the case with Army Artillery Reserves. It was soon evident that in spite of the most careful arrangements the great disproportion which exists between the depth of Artillery in column of route and the front when deployed for action, occasioned, in the case of such large masses, difficulties that it was impossible to overcome. Theory and practice are then equally opposed to the formation of large bodies of Artillery as integral parts of an Army, and we are justified in assuming that, as in the campaign of 1870-71, so in the future, we shall never see Army Artillery Reserves figuring again in the War organisation.

The final decision of this question, like the ephemeral appearance of an Army Artillery Reserve in the campaign of 1866, is closely connected with another question: Should Infantry be grouped in larger or smaller bodies, in other words, should the primary sub-division of an Army be into *Army Corps* or *Divisions*? This brings us back to the outset of our remarks, when we laid stress on the principle that the Army should, in the first instance, be divided into as many units as possible, but not more than can be directed with certainty and precision by one General.

If this condition were strictly carried out, that is to say, if an Army were always to contain the same number of primary sub-divisions, the latter would necessarily be of variable strength, depending on that of the Army. It need scarcely be said that to organise an Army in this manner would be impracticable. We must rather, while giving due weight to the principle above alluded to, fix a *normal strength* for the primary sub-divisions of the Army. The number of these in each Army must then be made to vary according to its size.

The only question on which any discussion has taken place in recent years is whether the primary *normal* sub-division of an Army should be the *Army Corps*—a force varying from 35,000 to 45,000 men (including supply columns and transport)—or the *Division*—a body of about half the strength of the Army Corps.

To begin with, putting aside the campaign of 1870–71, we must not forget that the Army Corps system is the result of the experience gained in the great and protracted struggles in the beginning of this century, and should be treated with respect.

Since that time the considerations which affect the organisation of an Army have really undergone no change, except that, with the introduction of universal liability to military service, the numerical strength of Armies has increased. This fact is certainly no argument in favour of diminishing the primary sub-divisions of an Army. Doubtless, if we had to deal with an Army of some 70,000 or 80,000 men only it might seem more rational to form it in four Infantry Divisions and one Cavalry Division, than in two Army Corps and one Cavalry Division. The two Army Corps really consist of but four Infantry Divisions, and in this case Army Corps Commanders would seem to be unnecessary, and therefore obstructive, intermediate authorities. With a peace establishment of 22 Army Corps, which would probably in case of war be organised as five or six Armies, each Army must consist of about four Army Corps and one or two Cavalry Divisions.

To carry out the Divisional system would then involve the division of each Army into some ten different fractions, which would make effective command difficult.

Experience teaches us, moreover, that the main difficulty in regulating the daily movements of Armies does not arise so much from having to regulate the movements of the troops themselves, but from the difficulties connected with what is classed under the heading of supply columns, transport, &c. If the Staff of the General commanding an Army had, besides regulating the daily march of some eight Infantry and two Cavalry Divisions, to issue instructions (which must often be very varied, according to the special circumstances of time and place) as to the position which the ammunition and supply columns were to take in the order of march, it would simply be attempting the impossible. The principle of the division of labour must, in fact, be applied.

It is especially in the matter of marches—that almost daily recurring incident of active operations in the field—that the advantages of the Army Corps as the primary sub-division of the Army are especially apparent. An Army Corps, with that portion of its columns and transport from which, as a rule, it cannot be separated, occupies a length in column of route of 30 kilometres (nearly 19 miles), that is to say, a good day's march, if only one road is available, and this is generally the case in the movements of large Armies. The arrangements for the march of a body of troops along a single road can undoubtedly be most effectually made by the officer who permanently commands the body of troops in question. Consequently, the vitally important matter of ensuring proper arrangements for the daily march of troops plainly points to the necessity of the Army Corps system in *large* Armies.

Experience leads us to the same conclusion in considering the special requirements of the units composing an Army.

For, in order to diminish our *impedimenta* as much as possible, we must use every effort to reduce to the smallest possible limits

the stores of ammunition, supplies, clothing, hospital equipment, &c., which we are obliged to carry with us, and the greater the size of the sub-divisions of an Army in time of war, the easier is it to do this. The requirements of large units are pretty much the same in character, whereas the smaller the units are, the more dissimilar are their wants. From this point of view again it seems preferable that the sub-division of an Army should be into Army Corps instead of Divisions, the latter being only half the size of the former. It need scarcely be pointed out that Divisions, if they are to form the primary sub-divisions of an Army, must be fully equipped with ammunition and supply columns and transport. It would thus be impossible for the General Commanding the Army to regulate all the different branches of supply, &c., in such a way as to meet at all times the requirements of the Divisions, unless indeed the Army consisted of three or four only. But as this is a case which would only very exceptionally occur, we need not take it into account in devising a system of organisation.

If the employment of troops on the field of battle only is considered, the Divisional organisation may perhaps appear practicable enough, though even then it would be often very desirable to have Generals entrusted with the command of more than one Division.

When two Divisions are engaged side by side in a long line of battle, it may often occur that, though the special objects to be accomplished by each have been most carefully defined, a very considerable difference may possibly arise in the difficulties of execution. These may indeed be as two to one. Thus, perhaps, while one Division can easily perform the duty allotted to it with two-thirds of its Infantry supported by its Artillery, the other Division may find it necessary to have its attack prepared by a more powerful force of Artillery than it possesses, and may require in addition a reserve of Infantry, which it cannot furnish. The Division entrusted with the easier duty might supply this reserve. But will it do so voluntarily before it has made *absolutely certain* of its own success? In cases

of the kind it is undoubtedly desirable that part of one Division should be detached to form a reserve for both and there should be, therefore, a Commander possessing the authority to order this to be done. It is clear that this authority should be exercised by an officer of higher rank, that is, by an Army Corps Commander and not by the Senior Divisional Commander, who, besides, would be thereby diverted from his own functions.

But it is when an Army is marching in separate columns, each made as strong as possible, and when each becomes independently engaged with the enemy, that the necessity for such superior authority is especially apparent. Now the General Commanding the Army can only be with one of these columns and can therefore alone exercise an immediate command over it. To entrust the command of the others to the senior Divisional Commander, whose Staff is only just sufficient for the management of one Division, is to leave too much to chance. A permanently constituted authority *must be more efficient* than one established for a particular occasion only.*

The basis of the organisation for war must then be the Army Corps system. This corresponds, moreover, in the German Army, to its peace distribution. Cavalry Divisions must also be formed, as we have already explained.

We come now to the sub-division of the Army Corps, which consists generally of twenty-five battalions. According to the regulations in force in the Prussian Army up to the year 1853, the Army Corps had a normal strength of twenty-four battalions

* It is perhaps worth mentioning that those who advocate a Divisional, instead of an Army Corps, organisation, adduce in support of their views the only defeat sustained by the Prussian Army in the campaign of 1866, that is to say, that of Trautenau. They do not attempt to prove, however, that the 1st and 2nd Divisions would have been more successful on that day had they not formed the 1st Army Corps. They also overlook the services performed at the time by the 5th Army Corps, which it would hardly have been capable of had it not consisted of a regularly organised force placed under the command of one General.

of Infantry and one battalion of Rifles, and was divided into four Infantry Divisions, to each of which was attached a Cavalry Regiment and a battery (eight guns). These Infantry Divisions were formed from the four Infantry Brigades which existed on the peace establishment. The Cavalry Division was formed from the four other Cavalry Regiments belonging to the Army Corps, and a Horse Artillery battery (eight guns) attached to it. The Reserve Artillery of the Army Corps consisted of four Field and two Horse Artillery batteries, or forty-eight guns in all.

This organisation was based on the system of enrolling the Landwehr contingents of the first levy in the Active Army, and therefore contained all the defects of such an arrangement. Four of the eight Cavalry Regiments belonged to the Landwehr, and were therefore not formed till the moment of mobilisation. It cannot be maintained that it would have been advantageous to have employed these regiments as Divisional Cavalry; on the other hand, the General Commanding a Cavalry Division, composed of one Line-cuirassier Regiment and three Landwehr Cavalry Regiments, would hardly have felt confidence in his command.

The division of the Army Corps into four small Infantry Divisions entailed therefore the splitting up of the only part of the Cavalry which was at the outset fit for service. The distribution of the Artillery was equally unsatisfactory, for the one battery attached to each of the five Divisions was strangely out of proportion to the six batteries kept united as Reserve Artillery. The attachment of one battery to an Infantry Division was, of course, quite insufficient.

These evils were partially remedied (even before the system of incorporating the Landwehr troops of the first levy in the Active Army was abandoned) by the division of the Army Corps into two Infantry Divisions, one Cavalry Division, and an Artillery Reserve. Each Infantry Division had then attached to it a Cavalry Regiment and two batteries (eight guns each). In the most unfavourable circumstances, therefore, only two Line

Cavalry Regiments would have been required for employment as Divisional Cavalry, and the Cavalry Division consequently comprised six regiments, thus acquiring a superiority in numbers over its former establishment which compensated in some measure for the inferior efficiency of the Landwehr Cavalry. The Infantry divisions had, it is true, only two batteries each, so that the Divisional Artillery of the Army Corps consisted, as hitherto, of four batteries only (or five, including that attached to the Cavalry Division). But by attaching the batteries in pairs to the Infantry Divisions, in place of singly to Brigades, something was gained, for both batteries could be directed by one leader, and their fire concentrated.

In the year 1860 the system of combining Landwehr troops with those of the Line to form the units of the Active Army was completely abandoned.

The introduction of railways as a factor in the operations of war was a strong reason for the exclusion of the Landwehr troops from the Field Army, apart from other serious defects which became daily more evident.

Since long preliminary marches are now dispensed with and troops can be brought in a very short time, almost direct it may be said, from their garrisons to the field of battle, it appears desirable that such troops as are only embodied at the moment of mobilisation should be relegated first of all to the second line, so that they may have time to complete their organisation. These considerations, as well as the further development of artillery, the increase of the number of batteries assigned to an Army Corps (the number of guns per battery being at the same time reduced from eight to six),* and the admitted necessity of strengthening the Divisional Artillery, finally led to the formation in which the Prussian Army Corps took the field in the campaign of 1870-71.†

Each Infantry Division consisted of two Infantry Brigades

* Six batteries each of four guns were temporarily formed on mobilisation from the three Horse Artillery batteries on the peace establishment.

† There were certain differences due to special circumstances in those Army Corps which did not belong to the Prussian Army.

(the Brigade being composed, as a rule, of two Infantry Regiments, but having added to it, according to circumstances, a rifle battalion, or sometimes an additional Infantry Regiment), a Cavalry Regiment (four squadrons), an Artillery Brigade* (four batteries of six guns each), one or two companies of Engineers (with a pontoon troop),† and a bearer company.

Since that time greater efforts have been made to facilitate the early deployment of a strong force of Artillery. This has led to the Divisional Artillery being increased and the Corps Artillery being abolished. A German Infantry Division at the present time has accordingly a Field Artillery "*Brigade*"* of two regiments, each of two Brigades (*Abteilungen*)* of three batteries (in all twelve batteries each of six guns).

This composition gives Infantry Divisions a certain amount of independence within the limits of the Army Corps to which they belong. They are quite capable, that is to say, of occupying in line of battle a front proportionate to their strength, and, supported by the Divisions on their right and left, to fight independently, whether on the offensive or defensive.

The reasons which led to the abolition of Corps Artillery and its distribution among the Infantry Divisions, and at the same time led to the increase in that arm, may be assumed to be well known. At the present day, Germany has 144 guns in each Army Corps, and is therefore stronger in Field Artillery than any other Great Power; the limit has here been reached, for a more numerous Artillery would be a hindrance, because of its length in column of route and the front it would occupy in action.

It is quite possible to imagine cases in which, either from the conditions of the combat or from the nature of the ground, the Cavalry Regiment attached to a Division cannot be employed at all, or only to a very limited extent. Nevertheless in view of the varied duties which have to be performed by Divisional Cavalry on the line of march, in the bivouac, or in quarters,

* The German Field Artillery "*Brigade*" must not be confused with the British Field Artillery Brigade, the latter being known in Germany as an "*Abteilung*."

† Now Divisional Bridge Train.

even when the duty of reconnoitring and screening the whole Army is being performed by Cavalry Divisions, we cannot hold that an effective strength at the outset of a campaign of 600 sabres (the establishment of a German Cavalry Regiment of four squadrons) is too great for an Infantry Division of some 12,000 bayonets. Even if, as some people think, a much smaller force of Cavalry would suffice, it would be most undesirable to divide a body like a Cavalry Regiment *permanently*. It has been proposed to form stronger regiments, each of six squadrons, and to allot one to every two Infantry Divisions. As, however, hardly any other argument can be adduced in favour of such a measure, and as it may be maintained with confidence that we have already reached the minimum, we have really no option left but to increase considerably the numbers of our Cavalry Regiments in peace in order to be able to attach permanently a Cavalry Regiment to each Infantry Division in war.

Each Infantry Division had in 1870-71 attached to it part of the *Engineer troops* belonging to the Army Corps (three companies, a pontoon troop and an entrenching tool column). This distribution arose from the requirements which almost daily presented themselves on the line of march.

Finally, a *Bearer Company* was attached by the war organisation to each Infantry Division, in order that directly a serious engagement began the wounded might be picked up and at once attended to.

In accordance with the principles on which the Army Corps system had been adopted as the primary sub-division of the Army instead of the Divisional, no other columns were assigned to Infantry Divisions in the order of battle. The power of *temporarily* attaching other columns in the event of its becoming necessary, was reserved.

Some Divisions when detached had a larger proportion of Cavalry and Artillery, and were also more plentifully provided with supply and other columns, in order to render them more independent and to allow them greater freedom of action.

What was known as *Reserve Artillery* in the year 1866, was

called *Corps Artillery* in the campaign of 1870-71. This change in name was intended to express the idea that the body in question was not to be really considered as a *Reserve*, but simply as a *part of the main body* to be employed under the orders of the Army Corps Commander. In the campaign of 1866 the Reserve Artillery was, in conformity with an erroneous theory, relegated almost to the tail of the columns of route, so that it could only come into action in the last phases of a battle and thus produce but little effect. In the battles of the campaign of 1870-71 the Corps Artillery was pushed rapidly to the front out of the advancing columns, and in conjunction with the Divisional Artillery prepared by a vigorous fire the attack of the main body.

The abolition of Corps Artillery which has taken place in the interval has made it possible to deploy rapidly the whole of the batteries of an Army Corps armed with guns at the very beginning of a battle.

On the other hand, the light field howitzer batteries will often be kept back until an opportunity arises for employing them in their special *rôle* of the destruction of a target behind cover. These high angle fire batteries, as well as the heavy field howitzer battalions, which have been allotted to most Army Corps, form a kind of Corps Artillery at the disposal of the General Commanding the Corps. They too may be occasionally brought early into action when the circumstances require it. Their *rôle* on the battlefield is, as is that of every other arm, to contribute to the attainment of a decisive result, and to be able, even when two forces meet unexpectedly, to support effectively their own Field Artillery in the attainment of superiority of fire. In this, as in many other respects, the art of war is reverting to the principles of Frederick the Great, who began nearly all his battles with the fire of heavy batteries.

The Corps Artillery, which consisted of four field batteries and the available Horse Artillery Batteries, had besides attached to it ten ammunition columns (four small arm and six artillery ammunition columns).

This combination was dictated by considerations of an administrative nature, and cannot be advantageous to either the batteries on the one hand, or the ammunition columns on the other.

Every effort used to be made to concentrate the former as rapidly as possible on the field of battle, but the latter were kept as far from it as practicable, and only allowed to approach when an immediate supply of ammunition was required, and then no nearer than was absolutely necessary. Besides, since the ten ammunition columns of the Army Corps had to provide reserve ammunition not only for the batteries of the Corps Artillery, but for the whole of the Infantry, Cavalry and Artillery of the Divisions as well, it was certainly desirable that they should be placed directly under the orders of the officer who had to regulate the supply of ammunition throughout the Army Corps, that is to say, under the Officer Commanding the Field Artillery on the Staff of the Army Corps.

The 3rd Bearer Company, attached to the Corps Artillery, might perhaps have been considered too strong in proportion to that force, it being of the same strength as the bearer companies attached to the two Infantry Divisions. The possibility, however, of forming it into two sections capable of being employed independently wherever their services might be required, and also the fact that in a great battle the units charged with the care of the wounded must, once they have taken up their position, work entirely according to the demands made on them on the spot and not with regard to the body of troops to which they are attached, sufficiently justified the assignment of the 3rd Bearer Company to the third great fighting component of the Army Corps.

The 3rd Bearer Company is now attached to one of the two Infantry Divisions.

The 2nd Line Transport of the Army Corps consisted of five Supply Columns (*Proviant Kolonnen*), the Field Bakery Column, the Remount Depot and an Escort Squadron. The latter performed the orderly duties necessary between the various parts of the 2nd Line Transport, which were often widely separated

from each other, and exercised military superintendence over five Transport Columns (*Fuhrpark Kolonnen*) consisting of vehicles drawn by hired or requisitioned teams. This organisation was a step in advance of the system of purely hired transport used at the beginning of the campaign of 1866, but it has been since further improved on, and we now have in view the formation of Transport Columns consisting exclusively of military transport.

The Pontoon Troop formed part of the Army Corps 2nd Line Transport for administrative purposes, but its disposal was kept in the hands of the General Commanding the Army Corps.

The twelve *Field Hospitals* might really be reckoned among the 2nd Line Transport, though they belonged in name to the *administrative departments* of an Army Corps. These latter were under the Administrative Staff of the Corps, and were called on to provide for all the requirements which arise with an Army Corps in the field.

We have thus sought to give a general view of the way in which the principles which govern the organisation of an Army have been evolved by following the organisation for war of the German Army up to the campaign of 1870-71. In Chapter II we shall proceed to a more detailed examination, under various headings, of the formation of the Army in time of war. But it is advisable to discuss here certain points which affect special formations for special purposes—some of which formations conform to the war organisation, while others necessarily deviate from it.

One principle must always be adhered to, and that is that alterations in the brigading of the troops are permissible only when absolutely necessary, and that the war organisation is to be reverted to directly the necessity for a deviation from it has ceased. The reason of this is evident. Every disturbance of the organisation however indispensable it may be exercises a prejudicial effect on the interior economy of the body of troops concerned.

Further, it is a well-recognised principle that when troops have to be detached, the question to be asked is not "how

strong shall we make the detachment," but, on the contrary, "how weak can we make the detachment with safety?" This principle is chiefly based on the importance of keeping the main body as strong as possible, but it is equally in accordance with the principle of disturbing the normal organisation as little as possible.

If circumstances render it absolutely necessary to adopt an exceptional arrangement and keep it up for several days—as for example in the case of the formation of an advanced guard—it is then desirable, as has been stated above, not to alter the formation once settled on without urgent reason, but to retain it as far as possible throughout the period in question. In this way the advantages resulting from a *strict* adherence to the war organisation are, at any rate, obtained to a *certain extent*. Daily recurring changes in the distribution of the troops are prejudicial to their vital interests, to precision and certainty in the transmission of orders and instructions, and finally to the successful accomplishment of the special object in view. A change is only necessary when, without it, the desired ends could only be attained with the greatest difficulty or not at all, or when the complete exhaustion of the force renders it desirable to relieve it by fresh troops.

A military instinct is needed to decide the various points which must be considered in such circumstances, and to make the arrangements necessary.

Special formations may become necessary in battle, on the line of march, or on outpost duty, or when a force has to be detached to accomplish a certain object, especially if the undertaking requires the employment of a force of the various arms of less than a Division.

The war organisation would generally be departed from in action in forming reserves. An Army Corps cannot dispense with Infantry reserves, and if a separate body of troops is not placed at its disposal by the General Commanding the Army, to act as a special reserve, it must form one itself either from one or both of its Divisions.

It may be of advantage to discuss here the question of dividing Army Corps into three parts. The Corps Artillery, which used always to form the reserve at the disposal of the General Commanding the Army Corps, has been abolished. The Commander of the Corps can therefore only exercise an immediate influence on the battle by means of the Heavy Artillery of the Army which may sometimes be allotted to him, or by breaking up one or both of his Infantry Divisions. A Division certainly loses much of its importance as a fighting unit by being split up, which must be done if the Corps Commander wishes to carry out some important duty with the greater part of the Corps and a less important duty with the remainder. In this respect a Corps divided into three parts has great advantages. But this should not be attained by adding a third Division of the same strength as the others to the Army Corps; for in that case the length of such an Army Corps in column of route on a single road would not allow of all its units being employed on the same day. It may here be mentioned that a change in the peace organisation of the Infantry (*e.g.*, the formation of battalions of three companies) might make the addition of a third Infantry Division* possible, without increasing the total strength of the Army Corps to any great extent (111 companies instead of 100).

When an Army Corps goes into battle with the Army of which it forms a part, it would rarely form a Cavalry Reserve, for the Divisional Cavalry should always be left with the Infantry Divisions. On the other hand the Commander of the Army will always endeavour to use his Cavalry Divisions as complete units on the battlefield. An Army Corps acting

* The advantages of a battalion of three companies are evident, for apart from the fact that such an organisation is more suitable in war, the promotion of Infantry officers in peace would be more in accordance with that in the other arms. At the present time, of every twelve Infantry Captains only one reaches the rank of Regimental Commander; in the Cavalry, on the other hand, the proportion is one to every five Squadron Commanders, in the Field Artillery it is one to every six Battery Commanders. The Artillery of the 3rd Infantry Division of the Army Corps could be provided on the reduction of batteries to four guns, which is to follow the introduction of the new quick-firing gun.

independently would generally be given a larger force of Cavalry than that normally assigned to its Divisions, and this Cavalry, after having performed the reconnoitring duties required of it, could be employed as a Cavalry Reserve in case of a general action.

An Infantry Division going into battle as part of an Army Corps hardly requires an Artillery Reserve. It may therefore at the very outset of the battle bring the whole of its Artillery into action. A reserve of Infantry must almost always be formed. It will depend on circumstances whether the Divisional Cavalry would be kept in reserve at the beginning of the battle, *i.e.*, at the immediate disposal of the Commander, and these circumstances will be affected by the information obtained by the Cavalry, who should remain in constant observation, even during the battle. It should, however, be kept close enough to the fighting line to be able to seize rapidly, of its own initiative, any opportunities favourable to its action which may arise.

An Infantry Division acting independently would, as a rule, have assigned to it a larger proportion than usual of Cavalry. It would, therefore, be in a position to form a sufficient reserve of this arm. As regards Artillery, however, a reserve would rarely be formed, except in certain circumstances when acting on the defensive.

The reserve of a Cavalry Division is formed according to the requirements of the moment.

Reserves formed of troops of the different arms, which are kept at the disposal of the G.O.C., should never be placed under the command of a single Commander.

It is not to be expected that the various arms composing the reserve would all be called on to act simultaneously at the same spot, or that the points on which they would be directed in battle would be close to each other. The command would thus be broken up directly the reserves were called upon to act. Nevertheless, if the whole of the reserves are in the first instance concentrated at one point, it will be the duty

of the Senior Officer present to exercise, in unforeseen emergencies, the authority of his rank according to the regulations of the service, and to give decisions in the event of any differences of opinion arising.

Bodies of troops which are moving near the enemy have to form an *advanced guard* (or a *rear guard*), and in certain circumstances, *flank guards* as well. The strength and composition of these must vary very much, according to circumstances. For reconnoitring a large extent of country and ensuring the Army against surprise, the employment of a strong force of Cavalry is necessary, especially when the Army is advancing. When, in a retreat, it is desirable to check a pursuing enemy, rear guards should be reinforced with Artillery. Advanced guards should also be strong in Artillery when, in the case of a pursuit, it is desirable at once to crush the resistance of the enemy's rear guard. It needs, we think, no argument to show that all the available Cavalry and a proportion of Field Artillery should be with an advanced guard in pursuit. When flank guards are employed for purposes of observation only, they should be formed of Cavalry alone; but if they are likely to be seriously engaged, they must comprise Artillery and Infantry as well.

On the *march* it is unnecessary to form a *reserve*. All the troops not detached on reconnoitring or outpost duties either in advance, in rear, or on the flanks, constitute the *main body* for which no Commander need be detailed, even when the march takes place on a single road. The reasons for this are closely allied to those which, as fully explained above, make it undesirable to appoint special Commanders for reserves of the different arms. There is nothing in fact to prevent the General commanding a column which is moving along a single road from himself regulating the march of the main body. If he has to be temporarily absent (as for example in going to see what is going on in front), he can always be represented, if necessary, by the next senior General present.

Further details about marches and measures for their security

are given in Chap. IV, B, "Marches in the Presence of an Enemy."

The duty of watching over the safety of the troops during rest, that is, after the termination of the day's march, or in the case of a protracted halt, is entrusted to the *outposts*; these are naturally formed from the advanced (or rear) guard and flank guards. No special distribution of the troops for this purpose is, therefore, usually made by the higher Commanders. The advanced guard which has been already detailed for the march, as well as the flank guards, which have been entrusted with special duties, continue without any further orders to see to the security of the main body against surprise, and to carry out their reconnoitring duties when the force is halted. Sometimes in the evening reinforcements of Artillery and Cavalry, which may have been attached during the day to the advanced (or rear) guard in anticipation of an engagement, may be directed to rejoin the body to which they belong. Before giving an order to this effect, however, it may be well to consider whether a similar arrangement may not be necessary on the following day. For, if so, the order would in most cases entail on the troops in question an unnecessary march to the rear and then again to the front. This could only be justified by their thereby finding better quarters or more abundant supplies.

When battles are prolonged to nightfall and are only interrupted by darkness, without the issue being definitely decided, the side which is determined to continue the struggle next morning, and therefore bivouacs during the night on the battlefield, must protect itself against surprise by some system of outposts.

As a general rule, no special distribution of troops would take place on such occasions. The Commanders concerned would rather improvise measures for securing the repose of their troops according to the ground they occupied. On the other hand, when there is a conscious feeling of victory, or an inclination to beat a speedy retreat, it would be desirable to assemble whatever units still remain intact at the disposal of the General Commanding on the spot, in order to employ them on the follow-

ing day, either as an advanced guard in pursuit or as a rear guard to cover the retreat. To such troops would then be entrusted the duty of securing the night's rest of the troops which had taken part in the day's battle.

As regards the formation of *detachments* to perform special duties, the general principle laid down is, that they should be as weak as possible. At the same time it must be remembered that to detach small parties of Infantry to great distances is always a proceeding attended with risk.

Whenever, therefore, the duty can be performed by Cavalry, supported, if necessary, by Artillery, Infantry should not be employed. In consequence of the slowness of its movements, the safety of a body of Infantry compelled to retreat before superior forces of the enemy may easily be imperilled, and even when not so opposed, Infantry is often a very long time in rejoining the force from which it has been detached.

In conclusion, we have only to insist on one point, viz., that in all cases when detachments have to be composed of troops of different arms (the word "detachment" is here used in a broad sense to include advanced and rear guards), the organisation should never be disturbed more than is absolutely necessary. If, for example, it were necessary to interfere with the war organisation of a Division, that of the Brigades should, if possible, be kept intact. This principle becomes of especial practical importance in the formation of advanced guards, &c.; it has even been proposed that they should be composed of battalions taken from different regiments, in order to obtain thereby the greatest possible freedom in the selection of Commanding Officers. It is usual to adduce in support of this plan the example of the Army of Silesia during the campaign of 1813-14, the regulations of which on this subject are admitted to be perfect models of their kind. But those who do so quite overlook the fact that circumstances have greatly changed since that time, both as regards the intrinsic value of the troops themselves and the training of the higher leaders. Various considerations at that time necessitated the union of

Landwehr troops to those of the Line, to form the units of which the Army of Silesia was composed. The former, which consisted principally of young recruits, had neither sufficient training to perform advanced guard duties efficiently, nor were they in a condition to support the great hardship and fatigue which it entails. It was, therefore, necessary to employ troops of the Line only. In order not to deprive the various Brigades of all their reliable troops by taking from them entire regiments for this particular purpose, the plan was adopted of detaching battalions only, which were relieved from time to time according to circumstances.

But at the present day there is no reason whatever against detailing whole Brigades or Regiments (with Cavalry and Artillery) for duty as advanced guards, and, if necessary, relieving the whole at once. Moreover, the most important part of this service now falls on the Cavalry Divisions, and the Generals commanding these should be undoubtedly "born leaders of advanced guards." The theory of "combined" advanced guards (*i.e.*, advanced guards formed of detached battalions) has, therefore, at the present time no real *raison d'être*.

The same principle holds good for *every* detachment. In very exceptional cases, that is to say, when excessive physical exertions are required which could only be expected from specially selected men and horses, it may be justifiable to depart from this rule in forming *small* detachments; for instance, instead of detaching an entire squadron, to send one made up of twenty or thirty picked horses from each squadron of a regiment.

CHAPTER II.

THE WAR ORGANISATION OF THE GERMAN ARMY.

AN Army is transferred from a peace to a war footing by the operation known as "*Mobilisation*." This process, especially as regards preliminary or preparatory steps, is, by the regulations of the Service, kept as far as possible secret. An examination in detail of the preparatory work which forms part of the duty of the General Staff cannot consequently be given here. But the "*Plan of Mobilisation*," to which all officers of the General Staff have access, and the "*Instructions for Mobilisation*" issued to the different military commands and authorities, contain everything that it is desirable for them to know. Besides, the preparatory work, which is annually revised or drawn up afresh to meet the case of mobilisation being necessary in the course of the year, gives every facility for acquiring the most thorough and intimate knowledge of the subject.

Mobilisation requires the following most important measures :—

Staffs, departments, and units must be at once completed with officers, clerks, &c. Units must be immediately raised to war strength in men and horses; special units that only exist on a war footing, such as depôts, garrison troops, &c., must be formed; and finally, all the above must be clothed, armed and equipped according to their particular duties.

In the first place it is necessary to know clearly in peace time the nature and number of the troops that are to be mobilised in case of war, and the equipment they are to receive according to the various objects for which they may be intended. The organisation in time of peace should therefore prepare in the

most effectual way possible for raising the Army to a war footing, by providing sufficiently strong peace cadres, for ensuring that the additional officers, clerks, men and horses required shall be forthcoming, and for having ready for immediate use the necessary arms, ammunition, clothing, equipment, supplies, and transport of every kind. Mobilisation can take place without a hitch, as planned and laid down, and all unnecessary loss of time be avoided when such matters have been thoroughly attended to in peace time.

As regards the latter point, it is a matter of the greatest importance that the calling out of the reserves, the purchase or acquisition of the additional horses necessary, and the forwarding and issue of military *matériel* stored in the various depôts, should be prepared beforehand with the greatest care, advantage being taken of every assistance the civil authorities can afford and of the existing communications of the country. The officers of the General Staff specially entrusted with the preparatory work of mobilisation must be constantly striving to attain a still higher degree of perfection in all such matters.

The chief limits to the rapidity of mobilisation are the carrying capacity of the railway system of the country and the disturbance to order caused in isolated places by the unavoidable massing at the same time of large numbers of men called to the colours. Order must, however, be maintained in any circumstances. It is assured if, as is enjoined by the instructions issued on the subject by the higher military authorities, a proper division of labour is observed, so that as many officers and officials as possible may co-operate towards the common end without collision or friction.

A process of mobilisation might, possibly, for instance, be imagined, in which the Army Corps Commands and Landwehr District Commands were alone concerned in the preparatory work, and the Divisional and Brigade Commands so far set aside as to be only called upon to prepare for the mobilisation of their Staffs.

Such a plan would be undesirable, because a number of persons whose co-operation is essential would be excluded from taking any part in the preparatory labours by which alone the necessary knowledge on the subject can be practically obtained.

The higher military authorities can at once see for themselves whether all preparations are duly and properly made, by examining and checking the "*Diaries of Mobilisation*." These are kept up in advance, by all units, and should show the whole process in detail with every step chronologically arranged in due sequence.

1. THE FIELD ARMY:

A. STAFFS OF ARMIES, ARMY CORPS AND DIVISIONS.

A mobilised Army must in the first place be *commanded*, and, as it is more or less freed from the system by which it is administered in peace, it must, as far as possible, be organised so as to be independent in the field, and able itself to satisfy its various wants. Communications with Germany, and relations with the authorities who still carry on their administrative functions at home, are nevertheless indispensable, so that the Army may be continually supplied with such things as it requires for its maintenance. It consequently follows that every Army, Army Corps or Divisional Staff must be provided with an Administrative Staff to carry on the duties of the various departments, besides the Staff which has to deal with operations of war.

The various branches and departments that have to be considered in the formation of an Army, Army Corps or Divisional Staff are as follows :—

The General Staff.

The Routine Staff (*Adjutantur*).

The Artillery.

The Engineers.

The Judge-Advocate's Department.

The Military Police.

The Intendance.

The "Communications," including railways, telegraphs and post office.

The Medical Department.

The Chaplain's Department.

The particular organisation of each separate branch or department determines whether it should be represented on every Army, Army Corps or Divisional Staff.

The more any department must be centralised—as for instance, in the case of "Communications"—the more necessary it is for the department to be represented on the higher Staffs, whereas, when decentralisation can be allowed to the utmost extent—as for instance, in the case of the Chaplain's Department—representatives of the department are only found on the Divisional Staffs.

The principle strictly followed throughout the German Service of reducing all Staffs to the smallest possible dimensions is moreover vindicated by restricting every Staff to what is absolutely necessary, and by not attaching to every Army, Army Corps and Divisional Staff representatives of all the various branches and departments according to any fixed rule.

There cannot be the slightest doubt that the addition of every individual not absolutely required on a Staff is in itself an evil. In the first place, it unnecessarily weakens the strength of the regiment from which an officer is taken. Again, it increases the difficulty of providing the Staff with quarters, which affects the troops that may happen to be quartered in the same place; and these are quite ready enough, as it is, occasionally to look with a certain amount of dislike—though in most cases it is entirely uncalled for—on the *personnel* of the higher Staffs. Finally, it should be remembered—and this is the most weighty argument against the proceeding—that *idleness is at the root of all mischief*. When there are too many officers on a Staff they cannot always find the work and occupation essential for their mental and physical welfare, and their superfluous energies soon make them—

selves felt in all sorts of objectionable ways. Experience shows that whenever a Staff is unnecessarily numerous the ambitious before long take to intrigue, the litigious soon produce general friction, and the vain are never satisfied. These failings, so common to human nature, even if all present, are to a great extent counteracted, if those concerned have plenty of hard and constant work. Besides, the numbers of a Staff being few, there is all the greater choice in the selection of the men who are to fill posts on it. In forming a Staff for war the qualifications required include not only great professional knowledge and acquaintance with service routine, but above all things character, self-denial, energy, tact and discretion.

As regards the last-named qualification, newspaper correspondents would appear to be most undesirable hangers-on of a Staff, for their business requires the very reverse of discretion. But since it seems to be impossible, under the circumstances of modern war, to prevent such persons—often in themselves most estimable men—from accompanying the Staff, it is all the more necessary to exercise the greatest care in their selection. Correspondents once selected should be strictly bound over, and, what is more, carefully watched, so that they may be unable to send off a letter or telegram which has not been submitted to the censorship of an officer of high rank. The distrust that this would seem to imply must not be taken as directed against the intentions of men of this class, but rather against their military judgment, which cannot always be depended on. A letter written without the slightest intention of doing any harm, but which really might contain information of a most important nature to the enemy, can nowadays be extracted from a newspaper, and by means of the telegraph flashed *via* neutral territory straight to the enemy's camp in an incredibly short space of time. *Complete and unfettered* freedom of the Press is in fact utterly incompatible with a state of war.

The same line of conduct should be pursued as regards other individuals who have succeeded on some pretext or other, but without having any official position, in obtaining permission

to accompany an Army in the field. Such people invariably try to get attached to a Staff. The reasons for wishing to accompany the Army in the field may indeed be in themselves of a most patriotic and praiseworthy nature; but the presence of such persons only proves a useless burden to the Army, unless, indeed, they have some recognised duty, such as tending the sick and wounded, supplying the Army with medical and other comforts and articles of clothing.

Foreigners who, not being officers of an allied Army (or of a country whose friendship is beyond all doubt), either from curiosity, pretended personal interest, or for the sake of improving their military knowledge, put in an appearance either with the Staffs or troops, should be at once ordered about their business.

1. THE STAFF OF THE COMMANDER-IN-CHIEF IN THE FIELD.

It is to be hoped, in any future war that the united Army of Germany may be called upon to undertake, the Emperor will again be found at its head. His first assistant, as regards the province of warlike operations, is the *Chief of the General Staff of the Army*. The latter submits to the Emperor the various measures it is desirable to take to meet the requirements of the military situation, asks for his decision, and then, by order of the Commander-in-Chief, issues them to the Generals Commanding Armies in the form of "dispositions," "instructions," &c. The immediate assistant of the Chief of the General Staff of the Army, and his substitute in case of absence is the *Quartermaster-General*. The precise duties of the latter have never been clearly defined, and this would only be desirable in the extreme case of the Chief of the General Staff of the Army and the Quartermaster-General not being on the best of terms. And even if this were so there would still be no necessity for any regulation clearly defining the functions of the latter. For without it the Quartermaster-General can

always find a completely independent line of action, especially in superintending the general business of the General Staff of the Commander-in-Chief's headquarters, thus relieving the Chief of the General Staff of certain details—which, however, have to be settled by high authority—and enabling the latter to devote his attention more completely to the *higher* duties of his post.

In the campaign of 1870-71 the Quartermaster-General was, in addition, called upon to keep an eye on the "Communications,"* as there was then no officer filling the post of Inspector-General of Communications on the Headquarters Staff. The Intendance and Telegraphs were only generally represented, as regards the Forces in the Field, on the Staff of the Commander-in-Chief, by the *Intendant-General*† and the *Director-General of Military Telegraphs*‡. These officers were dependent on the Chief of the General Staff for the information necessary to enable them to fulfil their respective rôles, but were not bound by any hard-and-fast regulations. The judicious selection of the officers in question made the want of regulations on the subjects in question scarcely to be felt. Any defect in this respect was admitted as soon as it was discovered, and at once rectified. The Intendant-General of the Army in the Campaign of 1870-71, who had been Quartermaster-General of an Army in the war of 1866, and had belonged for many years to the General Staff, was almost daily to be found at the conferences of the General Staff at the King's headquarters, ready to answer any inquiry, and was kept informed of the plans and intentions of the Commander-in-Chief.

The Director-General of Military Telegraphs, who had been an officer of the General Staff, hardly required any directions from the Quartermaster-General to enable him to take the

* The *Field Post Office* attached to the Staff of the Commander-in-Chief had, indeed, a practically independent position, but had nevertheless to act conformably to the directions of the Quartermaster-General.

† The *Field Commissariat Department* was under the Intendant-General.

‡ The Director-General of Military Telegraphs on the Commander-in-Chief's Staff had the immediate services of a *Field Telegraph Detachment* at his disposal

necessary steps to secure telegraphic communication between the headquarters of the Commander-in-Chief and those of Generals Commanding Armies.

The Field Railway Service, on which the communications of the Army may be said to have mainly depended, was in charge of a Chief of a Section of the General Staff of the King's headquarters, and a railway official of high rank was temporarily attached.

Military operations, together with supply, railways and telegraphs, were thus all managed at the Commander-in-Chief's headquarters directly or indirectly by the General Staff, enlarged for the purpose. The latter had, in addition to two Adjutants, to carry on duties connected with the interior economy, &c., of the General Staff itself, three Chiefs of Sections and nine officers. The General Staff of the Commander-in-Chief's headquarters was thus divided into three Sections, viz. :—

- a. Operations and organisation of the German Army.
- b. Railways and other communications.
- c. Intelligence Department, information as to the organisation of the enemy's forces and negotiations with the enemy.

Of the nine officers above referred to as belonging to these Sections, a considerable number were invariably absent for several days together on duties of a special nature, which, in the event of the duty being of an exceptional kind, entailed the absence of the Chiefs of Sections themselves. In fact, owing to officers being detached for considerable periods at times, and to temporary vacancies, the General Staff of the King's headquarters may almost be said to have been never complete at any single moment of the campaign. According to its establishment, it comprised 2 General Officers, 3 Chiefs of Sections, 2 Routine Staff Officers, 3 Field Officers and 6 Captains of the General Staff, 10 topographers and draughtsmen, 3 clerks,* 4 orderlies 59 train soldiers, and 115 horses.

* Most of the writing, when the documents concerned were in any way important, was done by officers and higher officials. A Field Officer kept the Confidential Journal of Operations.

It is improbable that in the next great war the General Staff of the Commander-in-Chief's headquarters will take the field in greater numbers than in the last. The officers employed on it in the war of 1870-71 were fully equal to the calls made on them. But its organisation will in all probability be somewhat different, as according to the General Order of the 2nd June, 1872, on "Communications and Railways," these are now placed in charge of an Inspector-General under the Chief of the General Staff of the Army. This alteration in organisation, which will be more closely examined further on, was shown to be necessary to enable all communications, especially railways, to be turned to the best account by a central directing authority.*

The *War Minister*, with certain officers and employes of the War Ministry forming his Staff, closely followed the progress of military events as a member of the Commander-in-Chief's Staff. As a rule he was present at the interviews of the Chief of the General Staff of the Army, and was thus enabled, by learning the plans and decisions of the Commander-in-Chief, at once to give directions to the War Ministry to meet any demands required in his own particular province.

A similar desire to secure the proper representation of the *Artillery* and *Engineers* caused the Inspectors-General of these arms of the service to be mobilised with their Staffs and attached to the Commander-in-Chief's headquarters. Matters actually connected with arms and ammunition as regards the Field Army were left to the Officers Commanding the Artillery of Armies and Army Corps. A similar course was pursued as regards the Officers Commanding the Engineers of Armies and Army Corps.

The external routine staff work of the Commander-in-Chief's Staff was performed by the General and Wing Aides-de-Camp of His Majesty and mounted *Feldjäger*. The *Military Cabinet* continued to carry out the same duties as in peace, though

* See Part III, Ch. IV, A. 2 and B. 5.

these were very considerably increased by the circumstances of war, especially as regards the promotion and appointment of officers.

In view of the importance of the German Fleet at the present day and of the still greater importance which it will have in the future, the Chief of the Staff of the Navy and the Chief of the Naval Cabinet with their Staffs will in future be attached to the Headquarters Staff in order to ensure the co-operation of the Navy with the Army.*

Police and discipline were questions left to the *Commandant* of the Commander-in-Chief's headquarters.† For such purposes he had, in addition to a detachment of *Field Gendarmerie*, a *Headquarter Escort* of Infantry and Cavalry. The former mustered 250 bayonets and the latter 180 sabres. Its first duty was to ensure the safety of the Commander-in-Chief and his Staff on the march and in quarters. The Cavalry in addition had to provide mounted orderlies.

The *Judge-Advocate*, *Medical* and *Chaplain's* Departments were not represented on the Commander-in-Chief's Staff.

Seeing the great powers given to Generals Commanding Army Corps in matters of Military Law, there appeared, under the circumstances, no necessity for attaching Judge-Advocates to Staffs higher than those of Army Corps. The Medical Department was represented in a higher degree by Surgeons-General attached to the Staffs of Armies, but the Chaplain's Department, excluding Chaplains belonging to hospitals, was only represented on the Staffs of Divisions by Divisional Chaplains. On the other hand, the Royal Commissioner and Military Inspector of the Volunteer Society for Aid to the Sick and Wounded in War, was often in the war of 1870-71 working immediately in concert with the Intendant-General of the Army, and consequently present at the Commander-in-Chief's headquarters.

2. THE STAFF OF AN ARMY.

The *General Staff* of an Army comprised the Chief of the General Staff, the Quartermaster-General and a certain number

* Part III, Ch. X.

† A second Commandant has recently been added.

of Field Officers, Captains and Lieutenants of the General Staff according to the size of the Army. It was not divided into sections, but the different officers dealt with all matters connected with warlike operations—organisation, communications, telegraphs, railways, the Intelligence Department, &c., under the immediate direction of the Chief of the General Staff or of the Chief Quartermaster, as the case might be; a permanent distribution according to the nature or character of the work being, however, at the same time found advisable.

The position held by the Chief Quartermaster as regards the Chief of the General Staff is not laid down by any hard-and-fast regulation. The former is subordinate to the latter, and his substitute in case of absence or sickness. The actual relations between the two officers mainly depend on their judicious selection.

The chief Quartermaster is the office chief in all matters with which the General Staff have to deal. He is thus kept constantly informed of everything that goes on, and is in a position to deal independently with all matters of minor importance. But he must pay particular attention to all questions affecting "Communications" in the broadest sense of the term, and invariably keep himself in constant communication with the Intendants of Armies.

The Routine Staff comprised a number of Field Officers, Captains and Lieutenants depending on the strength of the Army, the numbers being about the same as those of the General Staff of the Army. The Senior Routine Staff Officer acted as office chief in all matters affecting the Routine Staff (promotions, appointments, recruits, remounts, general orders, reports and returns) thus relieving the Chief of the General Staff from a vast amount of minor detail.

The *Artillery* of an Army was represented by a General Commanding the Artillery, provided with a special Staff. He did not hold any actual military command, for an Army Artillery Reserve was never formed, nor was he ever given the general direction of the combined Artillery of several Army Corps in battle. Since

the massing of the Artillery in battle under one command will scarcely ever be required in the future, it will be sufficient to attach an Artillery Staff officer to the Staff of the Army to deal with questions which concern the Artillery as a whole, *e.g.*, the supply of ammunition from the ammunition parks. The case is somewhat different if an Army has Siege Artillery specially attached to it. It may then be necessary to place all the Heavy Artillery under the command of a Garrison Artillery General.

The *Engineers* of an Army were represented on the Staff of the Commander-in-Chief by a General Commanding the Engineers, provided with a special Staff. Since the duties required of them will not be very exacting in future, they can be replaced by an Engineer officer on the Staff of the Army, who should be charged with the provision of engineer stores. An Engineer General may, however, be necessary when a large body of Engineers is brought together to carry out siege works.

The *Judge-Advocate's Department* was not permanently represented during the war of 1870-71 on the Staffs of Armies, as questions of military law were left to Generals Commanding Army Corps, Divisions and Brigades, and when it became necessary for any particular purpose, the services of an Army Corps Judge-Advocate could always be procured. A Judge-Advocate General has recently been allotted to each Army Staff.

Military police duties at Army headquarters are under the "Commandant," who has also charge of the Army Staff Escort. There is in addition, a detachment of Field Gendarmerie available for such duties. The Commandant takes his orders directly from the Chief of the General Staff of the Army.

The Intendance of an Army has a head representative in the Army Intendant. His chief duties consist in seeing that man and horse are properly supplied with food. To enable him to do this he takes the necessary directions from the Chief of the General Staff, whose subordinate he is in all matters, which he, as a member of the Staff of the Army, has to see carried out. The most important of these are : making the best use of the resources of the country comprised in the rayon

of operations, in the interests of the Army, by establishing stores, requisitioning supplies of food, cloth, and leather; assessing and collecting war contributions in money, and taxes; framing orders and instructions on the issue of supplies to Army Corps. The Army Intendant occupies, as chief of the Intendance, an independent position on the Army Staff as regards the whole system of pay and accounts, as well as in his relations with the Intendant-General of the Forces in the Field, the Army Intendants of other Armies, the Communications and Corps Intendants. He has at his disposal the necessary *personnel* of Intendance employés and clerks, and the Field Commissariat Department of the Army.

The "*Communications*" of the Army are under an Inspector of Communications. He is, on the one hand, under the orders of his General, and on the other, under those of the Inspector-General of Communications and Railways. To carry out the functions that are assigned to him, of which more will be said further on when dealing with the organisation of the "*Communications of the Forces in the Field*,"* he is provided with a special Staff. The troops detailed to guard and protect the Lines of Communications are under his orders.

The *Medical* and *Hospital* Departments are under the chief supervision of the Army Surgeon-General. The latter must be in constant communication with the authorities in charge of "*Communications*," with a view to the rapid evacuation from the hospitals of all sick and wounded that can be moved, so as to free the field hospitals and enable them to again meet the demands of the Army operating against the enemy.

The Society for Aid to the Sick and Wounded in War was in the campaign of 1870-71 represented on the Staffs of the different Armies, by delegates having permanent relations with the Army Intendants, the Army Surgeons-General, and the authorities in charge of "*Communications*."

Finally, there was attached to the Staff of every Army a *Field Post Office*, which in all matters not absolutely of a postal or technical nature, was under the Chief Quartermaster.

* Part III, Ch. VIII B.

The Armies consist of Army Corps, Cavalry Divisions, Reserve Divisions, mixed Landwehr Brigades and mobile railway and line of communication units. Telegraph detachments, balloon sections, Engineer siege companies and Siege Artillery are added when required.*

3. THE STAFF OF AN ARMY CORPS.

The following branches and departments were represented on the Staff of an Army Corps :—

The *General Staff* consisted of the Chief of the General Staff, a Field Officer and two Captains.† The Chief of the General Staff is at the same time Chief of the whole Staff. As in peace time, not only are the officers of the General Staff and Routine Staff under his immediate orders, but also, so far as all office duties actually connected with the Army Corps are concerned, the Corps Judge-Advocate, the Corps Field Intendant and the Corps Surgeon-General (as heads of their respective departments). The Officer Commanding the Staff Escort,‡ and the Officer Commanding the detachment of Field Gendarmerie, as well as the Field Postmaster (in charge of the Field Post Office), were also under his immediate orders. He was in direct communication with the Officers Commanding the Artillery§ and Engineers of the Army Corps, who were immediately under the General's orders. This arrangement has worked very satisfactorily, and, with the exception of a few alterations due to changes in organisation, it still holds good.

There are no rules or regulations on the distribution of the work or duties of the General Staff. The Chief of the General Staff is responsible for the due performance of all business, and should the General be absent or otherwise prevented from attending to his duties, he has the power to sign himself any orders or instructions of a pressing nature. It is his special

* Part III, Ch. II D. "Special establishments."

† Three are now provided.

‡ He is now under the Commandant of the Corps Headquarters.

§ Now abolished. The Officer Commanding the Corps Ammunition Columns and the Officer Commanding the Train have been added.

duty to see to the proper drafting and preparation of all important "orders" and "instructions," and the issue of arrangements for the marching and quartering of the troops. He has charge of the Intelligence Department. He should assign the most important duties of his office to the Field Officer of the General Staff, who, moreover, should always be kept sufficiently informed to be in a position to take over the duties of his Chief at any moment. The Field Officer keeps the diary and journal of operations of the Army Corps. The other two officers of the General Staff may be allotted work at the discretion of the Chief, or assigned special duties with the sanction of the General commanding.

The Routine Staff consisted of four Routine Staff Officers (two Captains and two Lieutenants). The Senior acted as office chief in all matters not immediately connected with military operations, thus relieving the Chief of the General Staff of a considerable amount of detail, without, however, actually freeing him from any of the responsibility attached to his post.

As a whole, the office work of the Routine Staff is less in the field than in peace, and is chiefly confined to matters affecting officers, drafts of men and horses, and reports and returns. When secret or confidential orders have to be prepared, the Routine Staff may assist in drawing them up. They may also be sent as bearers of written orders of an important nature, which it is deemed inadvisable to entrust to mounted orderlies. It may be often desirable to increase their numbers for this duty by temporarily attaching orderly officers drawn from Cavalry Regiments. The most important duty Routine Staff Officers have to perform in the field is transmitting verbal orders in an engagement. These often require to be explained. A Routine Staff Officer must on no account take upon himself the responsibility of modifying an order he is given to deliver, but he should be in a position to give such information to the officer to whom he conveys the order as may enable the latter to decide for himself. This consequently necessitates the employment, as Routine Staff, of officers who are

intelligent, observant, capable of forming an opinion, that is to say, in every way thoroughly trained soldiers.

The Intendance was represented by a Field Intendant, assisted by an Intendance official who acted as his substitute, and a suitable *personnel* of clerks and assistants. The different administrative branches comprised are the *Corps Military Chest*, the *Field Commissariat Department*, and the *Field Bakery Department*. The duties of these are laid down by special regulations.

The Intendant, whose duties in the field also form the subject of special regulations, has the exceedingly difficult duty of satisfying all the material wants of the troops when the Army is in motion, by daily providing and forwarding the necessary quantities of supplies. He can only be in a position to do this effectually if he is constantly kept informed by the Chief of the General Staff of the operations contemplated. He can then meet to the utmost of his ability the wishes of the latter as regards the disposal of his supply columns (field bakery column, provision columns, and transport columns).

The *Medical Service*, having at its head the Corps-Surgeon-General (with an Assistant Surgeon and a Staff Apothecary*), dealt with general medical arrangements, and the employment of the field hospitals.† As a rule there would be a delegate of the Society for Aid to the Sick and Wounded in War attached to the Staff of an Army Corps.

The *Judge-Advocate's Department* was represented by the Corps Judge-Advocate. In war he acted as the first legal adviser of the General Commanding. At the present time, too, only one Judge-Advocate is attached to the Staff of an Army Corps, and he deals with all questions of military jurisprudence. The Army Corps Commander has the power to give the Divisional courts jurisdiction over all troops under his immediate command. There is no appeal against or revision of sentences and confirmations in

* Now a Senior Surgeon and Corps Staff Apothecary.

† A Consulting Surgeon with a Senior Surgeon are now attached to the Staff of a Corps Surgeon-General.

the field; generally, however, the procedure is the same as in peace. Any vacancies on the local Staff may be filled by officers.

The *Artillery* was under the Officer Commanding the Field Artillery of the Corps. He was responsible for the efficiency of the batteries and ammunition columns of the Army Corps, and had further to see to the supply of arms and ammunition for all arms comprised in the Army Corps. In a general engagement he was available, if the General Commanding so directed, to take command of all the Artillery in action.

As the Corps Artillery is now abolished and the Field Artillery has been organised in two Brigades and attached to the Infantry Divisions, the Officer Commanding the ammunition columns of the Army Corps is now charged with the arrangements for ammunition supply. Should it perchance be necessary to place the whole of the Field Artillery under one command in a battle, the senior of the two Field Artillery Brigade * Commanders would take over command of the whole.

The two Train battalions are under the command of the Officer Commanding Army Service Corps, who has recently been added to the Army Corps Staff.

The question here arises whether, since the ammunition and supply columns will usually be following the Corps on one road, it would not be a more satisfactory organisation to place the Officers Commanding the ammunition columns and the Train of an Army Corps under the command of one General.

The Engineers of an Army Corps are expected to maintain in a state of efficiency the Field Engineer companies as well as the *matériel* of the bridging trains. For purposes requiring either the direction or assistance of an Officer of Engineers, there is attached to the Staff of an Army Corps an Officer Commanding the Engineers (Commanding the Engineer Battalion).

* A German Field Artillery Brigade consists of 2 Regiments of 2 Brigade Divisions each—in all 12 batteries—and is commanded as a rule by a Brigadier.—(Tr.)

The Officer Commanding the *Staff Escort*,* to whom is attached the Corps Veterinary Surgeon, has to see to the *quartering and security* of the Army Corps Staff, has charge of orderly duties and has disciplinary powers over the Train drivers, &c., belonging to the Staff.

The Officer Commanding the detachment of *Field Gendarmerie* has charge of all *police duties* in the rayon occupied by the Army Corps, and has to see that his gendarmerie patrols properly perform their duty.

The *Field Post Office* of an Army Corps is in charge of a Field Postmaster, who, in all matters not of a purely postal character, has to conform to the directions of the Chief of the General Staff.

4. THE STAFF OF A DIVISION.

The Staff of a Division is very much smaller than that of an Army Corps, both as regards Staff and departmental services.

The *General Staff* is represented by an officer of the General Staff (usually a Field Officer) who by regulation is not given the high position of "Chief of the General Staff," as the General commanding the Division can and must superintend all details himself. The General Staff officer of a Division has in fact less to do with deliberations connected with the greater operations of war, and should consequently be looked upon rather as one whose duty it is more to execute than to design or plan. It is, however, both desirable and necessary for him to be in constant contact, in all matters of business, with the heads of all branches and departments. He cannot perhaps be given the position of Chief of the General Staff as head of the whole Staff, but if he is thoroughly up to his work and conscientiously performs his duties he can, nevertheless, gain the confidence of his General to such an extent as to be practically given the position of *first man* on his Staff. Such being the case, it cannot be otherwise than

* He is now under the command of the Commandant of the Corps Headquarters, who also has a Captain to take charge of the Staff baggage.

advantageous if the officer of the General Staff is the senior officer in military rank on the Staff, and can thus, without any further arrangement, at once take over the duties as head of the office.

The Staff of a Division also comprises two Routine Staff Officers (a Captain and a Lieutenant), and these may often find themselves called upon to perform duties which are more properly those of the General Staff. Under certain circumstances it may be necessary to attach orderly officers.

A Divisional Staff has besides a Camp Commandant, a Transport Officer, and an escort.

The departmental services of a Divisional Staff are represented by a Field Intendant, a Field Commissariat Department, a Field Post Office, a Divisional Surgeon, a Divisional Judge-Advocate, and two Field Divisional Chaplains.

In a Cavalry Division there is only one Field Divisional Chaplain, and no Divisional Surgeon.

B. THE ARMY CORPS AND THE UNITS COMPOSING IT.

The general composition of a mobilised German Army Corps has changed little since the war of 1870-71.

An Army Corps may be generally taken as composed as follows :—

Two Infantry Divisions. Each of these consists, as a rule, of two Infantry Brigades (each of two regiments, three battalions strong), half a Cavalry Regiment (three squadrons), a Field Artillery Brigade of two Field Artillery regiments each, of two Brigades of three field batteries each,* one or two field companies of Engineers (there being three to an Army Corps), a Divisional Bridge Train, and one or two Bearer Companies.

The Rifle Battalion and Machine-gun section† belonging

* One of the regiments has a light field howitzer Brigade Division, with a special light field howitzer ammunition column.

† Machine-gun sections may, if necessary, be attached to the Cavalry Divisions as well

to the Army Corps is attached to an Infantry Brigade. Should there be two Rifle Battalions belonging to the Army Corps, one would be assigned to each Infantry Division, and further attached to one of the Infantry Brigades.

- b. *An Engineer Battalion of three companies*, one or two of which is attached to each Infantry Division.
- c. *The Corps Telegraph Section.*
- d. *The Corps Bridge Train.*
- e. *The Ammunition Columns.* These are formed in two detachments, each consisting of two Infantry and four Artillery Ammunition Columns. They are under the Officer Commanding the Ammunition Columns of the Corps.
- f. *Two (Supply) Train Battalions*, each composed of three Supply Columns, three or four Transport Columns and a Remount Dépôt.
- g. *Two Field Bakery Columns.*
- h. *A Bearer Battalion* of three Bearer Companies (permanently attached to the Division) and twelve Field Hospitals.

One or more battalions of Heavy Artillery are nearly always attached to an Army Corps.

It is assumed that the organisation of, and the tactical and other formations used by the different arms for marching and fighting are sufficiently well known to need no further description. But it is desirable to draw attention to, and give an idea of, the great difference that exists between the *ration strength* of an Army Corps as regards men and horses, and its *fighting strength* in bayonets, sabres and guns, for the strength of troops in the field is usually considered under the former heading. Again, the vehicles that accompany the troops, staffs, and departments in the field, greatly tend to lengthen columns on the march, and form of themselves a question of serious importance.

An Army Corps on a war footing at full strength in its normal formation of 25 battalions of Infantry and Rifles, 6 squadrons of Cavalry, and 24 batteries of Artillery, has a fighting strength of 25,000 men, 1,900 horses and 144 guns. On the other hand, its

ration strength in round numbers is 41,000 men and 13,000 horses, this being the total amount of rations daily required. Belonging to the Army Corps there are again, in addition, some 2,200 vehicles, including guns.

This apparently enormous number of vehicles is unavoidable if the troops are to be kept supplied with all they need. The transport with the troops and the ammunition columns enable the troops to be ready for battle. The telegraph carts, pontoons, tool carts, &c., increase their efficiency. The Field Bakery, Supply and Transport Columns assure their being fed under difficulties, the wagons of the medical units are required for the sick and wounded and allow of the erection of Field Hospitals.

The transport with the troops has been considerably increased since the last war. It is divided into 1st and 2nd Line Transport.

The 1st Line Transport includes everything that the troops require in battle; it therefore follows them immediately on the line of march. Its composition is given in the F.S. Regns., sect. 428.* The 2nd Line Transport comprises the vehicles which the troops require when at rest; it will not be included in the fighting portion of the columns when the troops are marching under service conditions and will be kept at a distance from the battlefield. (See F.S. Regns., sect. 428.)* The supply of ammunition is so regulated that for every rifle in the Infantry and Rifle Battalions (reckoning 800 rifles per battalion) 120 rounds are carried on the man, 72 in the Company ammunition wagons, 130 in the four Infantry Ammunition Columns of the Army Corps; a total of 322 rounds per rifle. 14,550 rounds are carried for each machine gun. For every gun of the '96 pattern, 80 rounds are carried on the gun and limber, 50 in the battery wagons and 51 in the Light Ammunition Column, 139 in the nine Artillery Ammunition Columns of the Army Corps, a total of 320 rounds. For each light field howitzer 53 rounds are carried on the gun and limber, 33 in the battery wagons, 67 in

* The German Field Service Regulations have been translated and published by authority.—(Tr.)

the Light Ammunition Column and 70 rounds in the eight Ammunition Columns of the Army Corps; altogether 223 rounds.

A field battery can thus fire four rounds a minute for $4\frac{1}{2}$ hours before it need draw upon the Artillery Ammunition Columns of the Army Corps.

The Corps Telegraph Detachment consists of 20 wagons, and has 12 instruments and 48 miles of field cable, as well as 50 miles of light line which is not suitable for Morse instruments. It is divided into four sections, which can be used independently and will chiefly be used to maintain communication with the Army Headquarters, in conjunction with existing lines whenever possible. One section is usually sufficient to maintain communication within the Army Corps. A line can usually be laid at the rate of a mile in 33 minutes.

The Bridge Trains of a mobilised Army Corps consist of two Divisional Bridge Trains and the Corps Bridge Train bearing the number and description of the Infantry Divisions and Army Corps respectively. A Divisional Bridge Train consists of thirteen vehicles, a Corps Bridge Train of thirty-four. The Corps Bridge Train, to which an Engineer Detachment is added, usually marches with the second section of the Supply and Transport Columns, but can, if required, be brought forward to join the advance guard. The technical equipment of the Corps and Divisional Bridge Train is the same; they can all, therefore, be used for building the same bridge. If the Officer Commanding the Engineer Battalion is not present, the Senior Company Commander has to superintend the bridge construction.

Under ordinary circumstances and with the usual arrangements, a Divisional Bridge Train can throw a bridge of 40 yards, and a Corps Bridge Train can, under similar conditions, throw a bridge of 133 yards; thus the combined Bridge Trains of an Army Corps can throw a bridge of 213 yards, and for this about 5 hours are required. If, however, the bridge is to take an exceptionally heavy load, such as Siege Artillery, these spans must be reduced by a third, or even a half.

If a foot bridge only is required, a Divisional Bridge Train can span up to 74 yards.

To cover the bridging of a river, or when the bridging *matériel* available is insufficient to throw a bridge from bank to bank, troops may be ferried over a river by *rafts* put together and worked with the stores carried by the bridging trains.

Two pontoons coupled to form a raft may take from 35 to 40 Infantry soldiers in marching order, but perhaps only from 30 to 35 if the stream be strong, the wind high or the water rough.

Two pontoons coupled 15 feet apart from centre to centre by 5 or 10 baulks, properly planked over and fitted with handrails, give a space of about 190 square feet available for Cavalry or Artillery. The raft thus formed can take from 8 to 9 horses with as many men, or a field gun with limber and ammunition, 4 horses and 8 men. A Divisional Bridge Train can furnish three such rafts, a Corps Bridge Train 13.

The following numbers can be carried across in one journey, exclusive of the crews :—

By the three rafts of a Divisional Bridge Train: 108 men, or 21 men and 21 horses, or 3 guns each with 4 horses and 8 men.

By the 13 rafts of a Corps Bridge Train: 650 men, or 133 horses and 133 men, or 18 guns each with 4 horses and 8 men.

When the stream is strong, *flying bridges* made to swing across the river by a hawser may be used with advantage. The raft would then be formed of from 5 to 13 pontoons. If the number of pontoons available be few, a river of comparatively slight breadth (110 to 130 yards) may be crossed by a raft made of four or five pontoons put together, running on a hawser stretched across.

The *entrenching tools* carried are as follows : —

Infantry and Cavalry—

An Infantry Battalion : 400 small shovels, 20 hatchets and 40 picks, carried by the men ; and 20 large shovels, 10 picks, 8 axes, 15 hatchets and 4 saws, carried by the Regimental Transport.

A Machine-gun Detachment : 24 small spades, 12 picks, 12 hatchets, 3 axes, 10 saws.

A Cavalry Regiment of four squadrons : 32 small shovels and 32 hatchets, carried on the horses ; 12 large spades, 14 hatchets, 1 pick, 1 saw and 16 small picks on the transport.

Artillery : 33 large shovels, 51 picks, 7 axes and 30 hatchets, carried on the wagons and limbers of each battery ; 43 spades, 43 picks, 46 hatchets, 22 axes, carried with the Light Ammunition Column ; 17 large spades, 17 picks, 19 hatchets, 9 axes, with the Light Ammunition Column of a Cavalry Division.

In a Company of Engineers : 110 large shovels, 22 hatchets, 55 picks and 58 axes are carried by the men ; and 60 large shovels, 30 picks, 20 axes, 6 crowbars, 6 cross-cut saws, 6 hand saws are carried on the entrenching tool wagons belonging to the company. The Engineer Detachment with a Cavalry Division carries 13 large spades, 6 picks, 3 hatchets, 8 axes on the men ; 12 axes and 4 saws on the wagons.

In 3 four-horse entrenching tool wagons and one technical wagon of a Divisional Bridge Train 614 large shovels, 164 picks, 15 hatchets, 93 axes and 27 saws are carried.

Entrenching tools are carried partly by the troops and partly on the vehicles.

Every vehicle of the Regimental Transport, Ammunition or Supply Columns is besides supplied with certain tools for bivouacking and similar purposes.

An Infantry Division is thus provided with some 5,000 small and 1,500 large shovels, and 700 large and 500 small picks, 1,000 hatchets in all, then, 8,000 picks and shovels for digging purposes, besides 1,400 other implements for cutting wood.

These figures include the tools carried by batteries and Machine-gun Sections for making gun pits and emplacements.

The number of tools carried with an Infantry Division is about one for every two men.

Only those tools with Infantry units and with the Divisional Bridge Train are available for entrenching work.

The Heavy Artillery also carries entrenching tools, partly with the Ammunition Columns (in the case of heavy howitzers) and partly on the platform wagons (in the case of the 10-centimetre guns* and mortars) so as to be able to throw up cover.

The Field Bakery Columns provide the troops with bread and biscuit when they cannot be supplied in any other way.

Each column consists of twenty-five vehicles, and can be divided into two sections, each of three sub-sections. They have each twelve field ovens. A column when in uninterrupted work can bake for 23,000 men in twenty-four hours. If it has to change camp it can bake for 13,400. The two columns together can therefore supply an Army Corps with its daily requirements in bread. Since every move reduces the working power of a field bakery, they should be kept in the same place as long as possible and then follow by double marches with double teams, the *personnel* either riding in wagons or being sent by train.

The six Supply and the seven Wagon Park Columns of the Army Corps, which are organised into two Train battalions, carry the reserve supplies. A Supply Column, which can be divided into three sections, consists of from twenty-seven to thirty-six supply wagons, and two to three other wagons, the wagons being partly four-horse and partly two-horse. The Wagon Park Columns are divisible into three sections, and have sixty forage wagons and two baggage wagons, all two-horse.

It is evident that a proper and judicious use of the various means of transport available is a matter of very great importance. In the first place it is well, as a general rule, to avoid loading wagons with articles of food that, relatively to their nourishing

* The 10-centimetre gun battalions belong for the present to the Siege Artillery.

properties, are either bulky or easily deteriorate and consequently have to be frequently renewed. Thus, to fill wagons with fresh meat or bread would, as a rule, be inadvisable for both these reasons. The former is generally easily procurable during active operations in the field, and the latter when carried in wagons for any length of time is generally unfit for use by the time it is issued to the troops, as it only keeps for nine days at most.

Fresh bread must therefore be consumed quickly, *i.e.*, as soon and as long as it is fit to eat. It must consequently be baked by the troops themselves, or by the Field Bakery Columns, which open their bakeries as soon as possible. It is then, as in the case of freshly killed meat, carried in the regimental transport, on the provision wagons.

The provision columns carry usually only flour or biscuit instead of bread, and for a similar reason salt pork and canned meat instead of fresh meat, together with rice, pulse, salt and coffee. As regards forage, oats only can be carried.

There is next the question whether it appears advisable to load the different wagons each with separate articles of food or to load each wagon partially or entirely with the different kinds of provisions comprised in the daily ration. The advantages of the latter plan are, as regards issue to the troops, of course, at once apparent; but, on the other hand, the time taken in loading the wagons on this system is much greater (in approximately the proportion of 3 to 2). This disadvantage must be accepted if the ideal of being able in case of need to send each unit its rations in single wagons detached from the columns is to be attained.

A well packed two-horse supply wagon can carry rations for 680 men, or forage for 125 horses; a transport wagon carries rations for 820 men or 150 horses; a four-horse supply wagon for 900 men or 166 horses. Thus a Supply Column carries a day's rations for 16,000 men and 1,400 horses, or for 10,500 men and 2,600 horses, or for 3,750 men and 3,750 horses. A Wagon Park Column can carry rations for 22,000 men and 4,800 horses, or for 7,500 men and 7,500 horses

The *Medical Service* of an Army Corps comprises *three Bearer Companies* and *twelve Field Hospitals*, organised as one Medical Battalion.

A Bearer Company comprises 8 Surgeons, 1 Apothecary, 8 Hospital Assistants, 8 Military Hospital Orderlies and 160 Bearers (Non-Commissioned Officers and Privates). It is provided with 8 two-horse ambulance wagons, 2 two-horse hospital store wagons, and 2 two-horse baggage wagons, and the provision wagon.

This organisation enables it to be divided into two sections of nearly equal strength, and it can thus be more extensively employed.

Orders as regards movements of the companies, establishment of dressing stations, removal of the latter from one place to another, or as to the employment of one or both sections, are issued to the Officer Commanding the Company by the General Commanding the Division, usually with the advice and concurrence of the Divisional Surgeon.

The duties of Bearer Companies on the field of battle consists in the first place in establishing a chief dressing station,* with the Surgeons and their assistants, and secondly, in searching for the wounded and conveying them to the dressing station, where their injuries can be attended to.

The Surgeons with their assistants have, in the first place, to prepare the wounded for removal to the field hospitals. They have, therefore, after giving them the necessary rest and treatment, to examine their wounds, to apply such bandaging and dressing as is required, and to perform minor operations or such large operations as cannot be postponed without immediate danger to life. For such duties the medical *personnel*

* At the beginning of an engagement, units establish their own dressing stations with their Regimental Surgeons, assistants and combatant bearers with the red arm band. The latter are not included in the terms of the Geneva Convention. The Surgeons, &c., of such regimental dressing stations should be relieved of their charge as soon as possible by the chief dressing stations, and thus enabled to rejoin their units with their *personnel* and *matériel*
—F.S. Regulations, Sec. 467.

would be augmented partly by Regimental Surgeons and partly by Surgeons taken from Field Hospitals. The latter would afterwards return to their respective Field Hospitals in medical charge of convoys of wounded.

The wounded who are to be received and treated in Field Hospitals are conveyed thither in the ambulance wagons of the Bearer Companies (provided these can be spared from the battle-field) or in hired or requisitioned wagons or carts or empty provision wagons.

After the wounded have been removed, and after such as are able to walk or bear further travelling without danger have been handed over to the nearest Commandant of "Communications," the Bearer Companies are no longer required on the battle-field, and hold themselves in readiness to move off on the receipt of orders, and follow their respective Divisions. Their duties as regards care of the wounded are, therefore, merely of a temporary nature. The further treatment of the wounded takes place in the Field Hospitals.

A Field Hospital comprises the following medical *personnel*: 1 Surgeon in medical charge, 5 Surgeons, 1 Apothecary, 9 Hospital Assistants; and 14 Military Hospital Orderlies. It is accompanied by 3 four-horse wagons for medical stores and appliances, 1 two-horse baggage wagon and 2 two-horse hospital store wagons and 1 staff wagon. A Field Hospital can accommodate 200 sick or wounded, and can be divided into two sections.

The employment of the Field Hospitals, or their attachment from time to time to Divisions, is regulated by the General Commanding the Army Corps. The latter, or, as the case may be, the General Commanding the Division, gives the necessary order for bringing forward or establishing Field Hospitals near the scene of an engagement. Once they are established, the sick and wounded are treated and cared for independently of the movements of Armies. In the case of a retreat in the face of the enemy, however, all the horsed transport, as well as all *personnel* and *matériel* not absolutely required for the immediate wants of the patients, should be handed over to the nearest Bearer company.

All the wounded who cannot be moved, and the appliances for their treatment, together with the necessary number of doctors, must remain behind under the protection of the Geneva Convention.

When the Army is either stationary or advancing, the Surgeon in medical charge of a field hospital must do his utmost to get the latter ready again for active operations. He must consequently endeavour to diminish as far as possible the number of sick and wounded under treatment (by evacuating as many as are able to travel, on hospitals established further in rear) and enable the field hospital to be relieved of its work by replacing it with *personnel* and *matériel* drawn from the authorities in charge of "Communications."* If the field hospital cannot be thus entirely relieved of its work, one section may at any rate be freed at a time. When the field hospital is relieved, the hospital which replaces it is a "Permanent Military Hospital," and is then under the authorities in charge of "Communications." The field hospital rejoins the Army Corps to which it belongs with the least possible delay.

Heavy Artillery will be attached to Army Corps when required, the unit is the battalion, which is divided either into four batteries of heavy field howitzers, or two mortar batteries.† The employment of the heavy howitzer battalions has already been discussed above. The mortars are available for special duties, such as the attack or defence of prepared positions. Each battery has 246 rifles and 11,070 rounds of small arm ammunition; each ammunition column has 45 rifles, 2,025 rounds small arm ammunition. The heavy howitzer batteries carry 432 shells, the mortar batteries 165. The ammunition column detachment of a heavy field howitzer battalion has eight ammunition columns, that of a mortar battalion, four ammunition columns. Each heavy field howitzer ammunition column carries 510 to 612 shells, the mortar ammunition columns, 255 shells. A heavy field howitzer battery can therefore fire for $2\frac{1}{4}$ hours at the rate of three rounds a minute,

* Part III, Ch. VIII B and C.

† The 10-centimetre gun batteries at present belong to the Siege Artillery.

and ammunition in its two ammunition columns will last for $5\frac{1}{4}$ hours, or 8 hours in all. A mortar battery can fire for $2\frac{3}{4}$ hours at the rate of one round per minute, and the ammunition in its two ammunition columns will last for $9\frac{1}{4}$ hours, or for 12 hours in all.

C. THE INDEPENDENT DIVISION.

1. THE CAVALRY DIVISION.

The German Cavalry Division is ordinarily composed of three Brigades of two regiments, each of four Squadrons, a Horse Artillery Detachment of two Batteries, each of six guns, with their wagons, and a light ammunition column, and also of an Engineer detachment. Machine gun detachments are added when required. It is very desirable that in the future some vehicles should be added to carry wireless telegraphy equipment, so that this invention, which is daily being perfected, may be made available for the strategic reconnaissance. The light ammunition column with the Horse Artillery has seven small arm ammunition carts, which form the small arm ammunition reserve. Until the introduction of ammunition columns for the machine gun detachments it will be necessary to add some ammunition carts for the latter.

The Engineer detachment, which is intended to carry out demolitions, is provided with a technical store wagon. In future each regiment will have, besides, two light vehicles to take the place of the old heavy collapsible boat wagons. These vehicles will carry the new Cavalry bridging apparatus, which enables the Cavalry Division to cross rivers in a very short time on rafts.

It does not seem necessary to attach medical units permanently, because the duties of the Cavalry Divisions in front of the Armies do not require them to become seriously engaged, so that the medical officers attached to units and the ambulance wagons with the regimental transport should be sufficient. The Cavalry Divisions do not usually suffer heavy losses, except in decisive engagements, and the general medical equipment of the Army Corps is then available for their use.

The transport, provision and forage wagons, which are attached to the Staffs, Squadrons, Batteries and other units, tend partly to the comfort and efficiency of the troops and are used to carry provisions for three days and forage (oats) for one. Hay and straw cannot, of course, be carried, but these will usually be found in the country in sufficient quantities, except in barren districts and at certain times of year. There are therefore only about 120 vehicles with the Cavalry Division, exclusive of the guns and battery ammunition wagons.

The experiences of the Campaign in 1870, which was fought in a rich country, led to efforts being made to free the Cavalry Divisions from every vehicle that was not essential, so as to increase their mobility as much as possible. In a poor country, or when the theatre of war has been exhausted by the huge armies which will be employed in future wars, the one day's forage ration of the Cavalry Division will soon be used up and will only be replaced from the country with the very greatest difficulty. To increase further the radius within which the Cavalry Division is to requisition will injure its mobility and lower its fighting efficiency.

Horses, however, require to be well fed when in hard work, even more than men,* otherwise their power of work is reduced at an astonishing rate. It will not be possible to rely on supplies being brought up from the supply columns of the Army Corps, for it will frequently be impossible to detail the marches of the Cavalry Division, which are usually in advance of the Armies, for several days ahead. For a Cavalry Division to halt to fill up its supplies or to fall back upon its supply columns would be directly to violate the principle which led to the number of its vehicles being reduced, viz., that it should be independent of supply columns. It will in future be quite exceptional for the Cavalry Divisions to be for any length of time in the neighbourhood of the Armies and their supply columns. This is indeed only conceivable just before a great battle; but in such a case the massing of large Armies in a small area greatly increases the difficulties of supply, so that the 5,000 horses of a Cavalry

* Three days' rations are, however, carried for the men, as has been mentioned.



Division will hardly be supplied with sufficient rations from the supply columns of the Army Corps.

It therefore seems absolutely essential that the German Cavalry Divisions should be allotted supply columns of their own in the organisation for war, as is done in Austria and Italy. These supply columns can then get their orders direct from the Cavalry Divisions and should be able to follow them even on bad roads. This necessitates the vehicles,* when loaded, being comparatively very light; still the numbers must not be unduly increased.

In order that these light vehicles should not be entirely filled with forage for their own draft horses, but should be able to carry several days' fodder for the Cavalry Division, it is essential that this fodder should be compressed so as to take up the smallest possible space, as is done in the case of certain preserved provisions. Hay and straw must be obtained from the country as before. The compressed fodder which has been invented has not yet come up to requirements, but this problem will no doubt be satisfactorily solved in the near future. Of course the horses must be accustomed in peace time to changes from oats to compressed fodder; this will give opportunities for testing the latter.

2. THE AUGMENTED INFANTRY DIVISION AND THE RESERVE DIVISION.

The extent to which an Infantry Division would be reinforced by Cavalry and Artillery, and provided with supply columns must naturally depend on the particular object for which the Division in question is detached, or, as is more often the case, formed to act independently.

If the Division is to act independently, it should be provided with supply and ammunition columns and administrative services to about half the extent of those of a mobilised Army Corps. Whether an extra force of Cavalry be desirable is a question that must depend on the nature of the operations the Division is to perform, the distance at which it is to manœuvre from the main Army, and the character of the country it is

* The vehicles at present in use are too heavy to be able to keep up with the Cavalry Division and to follow it on bad roads.

to act in. Country of a mountainous character would, for instance, require a much smaller proportion of Cavalry than flat country.

Again, for minor operations the Division need not be strong in Artillery, Engineers, or supply and ammunition columns. For instance, a Reserve Division detailed to hold a province of the enemy's country already occupied, and to protect the lines of communication running through it, would hardly require a whole Artillery Regiment. In a case of the kind it would, as a rule, be merely a question of occupying the country with small flying columns of Infantry and Cavalry, entailing the splitting up into small bodies of these arms, but requiring little or no Artillery. Similarly it would be unnecessary under such circumstances to have a full complement of supply and ammunition columns, as, since the troops are immediately employed in connection with the "Communications," their wants can be supplied by the authorities in charge of the latter.

Reserve Divisions, detailed to invest fortified places, should be, as a rule, augmented by Artillery, and more especially by Cavalry. From the fact of their duties being of a stationary character, they can dispense with a large proportion of the usual supply columns. Ammunition columns and bearer companies, as well as *personnel* and *matériel* for the establishment of hospitals, cannot, however, be dispensed with. If the investment becomes eventually a siege, the addition of special troops, that is to say, Engineers and Siege Artillery in proportion to the size and strength of the fortress, takes place as a matter of course.

In case of need Reserve Divisions can be combined to form Reserve Corps, and Reserve Corps to form Reserve Armies.

The above, it is thought, is sufficient to show the various considerations that should be borne in mind when a Division has to be detached or formed to act independently under different circumstances.

D. SPECIAL ESTABLISHMENTS.

Mixed Landwehr Brigades will be formed from the mobilised Landwehr troops, and will usually be allotted to Armies for duty

on the Line or Communications, and to guard the frontiers and coast. An Army Telegraph detachment is allotted to headquarters and to the Staff of each Army. It is under the Director of Telegraphs in the first case, and the Chief of the General Staff of the Army in the latter case. It has sixteen vehicles, and is charged with maintaining communication between headquarters and the line of communication, and permanent telegraph systems.

A Balloon Detachment consists of eighteen vehicles and is as mobile as Field Artillery; it carries two balloons (cigar-shaped captive balloons) and sufficient hydrogen gas in steel tubes to fill two balloons. The second balloon is an auxiliary balloon. The preparation of a balloon takes twenty minutes, the ascent (1,950 to 3,250 feet) two to three minutes. It takes fifteen minutes to haul in and prepare to move off with the balloon still full. It is difficult to move with the balloon full, because trees and telegraph wire interfere with the cable. It takes fifteen minutes to empty and pack the balloon. A balloon reconnaissance is dependent on the weather: a strong wind reduces the height of ascent, makes observation difficult, or even stops ascent altogether. It is seldom possible to reconnoitre beyond a radius of about 4 miles. Photography can be employed under favourable conditions. A reserve supply of gas is carried in gas columns. Each detachment has a gas column, which consists of sixteen wagons, and carries with it an auxiliary balloon and gas for two fillings; it fills up from the line of communication.

Siege Armies, Siege Corps or Detachments will be formed to carry out the siege of fortresses, forts and fortified places. Heavy Artillery, Balloon Detachments, Artillery and Engineer Siege Trains will be attached to them according to requirement.

The attack on fortresses is generally similar to a deliberate attack against a prepared position; heavier weapons are of course used than in field operations in proportion to the power of resistance of the place attacked; still, the peculiar conditions of the attack and defence of fortresses, *e.g.*, the limited space, the weight of metal used in the attack and defence, the constant proximity of the enemy, require a number of measures which are

only exceptionally employed in field operations, but *there is no essential difference between siege and field operations*. No hard-and-fast rules can be laid down for the attack and defence of fortresses. A resourceful leader will be able to achieve success by making a skilful use of the ground and of the enemy's weak points, and by taking full advantage of the mechanical appliances at his disposal. A comprehensive description of the methods of attack and defence of fortresses is the less necessary as the Regulations on the subject, though only designed for the troops concerned, are accessible to General Staff officers.

An Artillery Siege Train consists of heavy 12-centimetre and long 15-centimetre guns, heavy field howitzers and 21-centimetre mortars; it is manned by Garrison Artillery.

An Engineer Siege Train contains the tools, explosives and other apparatus required by Engineer Regiments. The very technical character of these units prevents their being described in detail.

2. THE GARRISON (OR HOME) ARMY.

The Garrison Army left at home in Germany is composed of such formations as do not at once take the field on mobilisation. It would, therefore, comprise such Staffs and departments as would be formed to take the place of those that had proceeded on active service, and would also include *depôt* troops, garrison troops and *Landsturm* formations.

To give in detail the various formations comprised in the above would be foreign to the object of this work. With the exception of certain officers of the General Staff taking the place at home of the Great General Staff that had proceeded on active service, and any others attached to Military Governments that might be established, each comprising the districts of several Army Corps, there would seem to be no employment for officers of the General Staff.

The special composition and manner of employment of the Garrison Army, and the question of its further development for war purposes, must depend so much on the course of events

in a war, and form to such an extent the subject of measures taken to meet each emergency, that very little can be said about it beforehand. The preliminary formation of the Garrison Army is moreover clearly laid down and defined by regulation, and corresponds generally with the division of the Empire into Army Corps and Brigade Districts. The military authorities, again, would retain in the main the same organisation that exists in time of peace, since military commanders and administrative authorities would immediately take the place and carry on the duties of those that had proceeded to the seat of war.

CHAPTER III.

OFFICE DUTIES IN THE FIELD.

A. GENERAL ARRANGEMENTS. ISSUE AND TRANSMISSION
OF ORDERS.

OFFICE work with Armies in the field must be restricted to what is absolutely indispensable and confined to the offices of the higher Staffs.

It is quite impossible for troops who have often to bivouac to carry on an extensive system of office correspondence. They are consequently only called upon to keep accounts showing the expenditure of supplies either in kind or money and give receipts for ammunition, draw up the field states and the returns showing men transferred to the reserve or sent to hospital, and forward reports on actions fought, together with the necessary enclosures (lists of killed, wounded, and other casualties, and account of ammunition expended).

Orders for actual operations in the field are in the case of the smaller units given, as a rule, verbally. But the larger units which receive their orders direct from the higher Staffs are rarely sufficiently closely concentrated to enable such a proceeding to be practicable. In the case of a Brigade, which, perhaps, by making use of the accommodation afforded by a village, is able to draw its bivouacs close together, it may be feasible enough. But the Division must always receive orders in writing—

a system entailing far greater precision than that of verbal orders, and therefore having the advantage of greater accuracy and clearness.

It need scarcely be said that on the march or during an engagement, a Divisional General gives a certain portion of his orders verbally, either directly himself or through certain officers. But in the case of higher commands, the troops belonging to which cover a larger extent of ground when engaged with the enemy, Generals Commanding will generally find it necessary to issue their orders written in a condensed form. Any misunderstanding that might arise in the transmission of verbal orders is more quickly seen and remedied on the comparatively small extent of ground occupied by a Division when engaged with the enemy than on the more extensive battlefield occupied by an Army Corps or Army. A large force consequently calls for greater care and precision in the issue of orders, and this is best ensured by always giving them in writing.

All the office work which we are obliged to carry on in time of peace at home in connection with the annual training of the Army, the continual alteration and improvement in the various branches of military organisation, the strictest system of military economy and administration is unknown in time of war with Armies in the field.

On the other hand, however, an entirely new class of office work arises in the field, and this is in connection with *Warlike Operations*.

It is unnecessary to dwell on its immense importance. Any mistakes in the preparation and transmission of orders, any want of clearness, any errors in their meaning, or the accident of their falling into the hands of the enemy, or coming to the knowledge of unauthorised persons, may have the most disastrous consequences. The fact, moreover, that in nearly every case all loss of time must be avoided, and that the means of conveying orders are often uncertain and exposed to danger, considerably increases the difficulty. We have consequently first to deal with *clearness and precision in issuing orders*, and next

with precautions against their contents coming to the knowledge of unauthorised persons.

As regards the latter question, the greatest discretion of those concerned is of the highest importance. To be discreet, reticent and in every way thoroughly reliable are naturally indispensable qualifications for officers entrusted with framing and transmitting orders for warlike operations.

At the headquarters of an Army, where there can be no lack of officers, it is not advisable, when many copies of an order or a set of orders have to be written, to employ persons of inferior rank for the purpose. With a lithographic or some such kind of printing press, the original can be written with prepared ink by an officer, the necessary number of copies struck off, and the stone or plate then cleaned under his supervision.

Orders of minor importance may, of course, be written or printed by clerks.

Next there is the "Confidential Journal of Operations," in which all telegrams, despatches, reports and orders issued or received, and relating in any way to warlike operations, have to be entered. The entry of a document, whether despatched or received, should contain the hour and minute as well as the date of despatch or receipt, and also the name of the person bringing it, or forwarding it to some further destination. In the case of telegrams it is sufficient to give the number of the field telegraph detachment, if it be on the spot. The "Confidential Journal of Operations," which supplies the first materials for drawing up an official account of the war, should be placed in charge of an officer, both on account of the importance of the work and also on account of the special secrecy which must in many cases be maintained. It remains with the officer in charge to decide when the documents received, or the copies of documents despatched, should be sent to the War Ministry. Until the time arrives for their being disposed of in this way, they are kept in portfolios under lock and key.

It may happen, however, in spite of every precaution, that some small note or document may now and then be left lying in the office, the contents of which might, if in the hands of the wrong persons, be of use in enabling the latter to form certain conclusions. For this reason, as well as to ensure the security of documents under lock and key, sentries or orderlies, furnished by the Staff Escort, should be placed over the office entrances* to stop all unauthorised persons from entering, and, if necessary, refer them to the officer on duty.† The latter is on duty for twelve hours at a time, and is relieved at about 11 o'clock in the morning and evening. He must, while on duty, never leave the office or its precincts; he opens all letters and documents received in the night, and uses his own discretion as to whether the case is sufficiently important for him to awake the Chief of the Section to which it refers, or, as the case may be, the Chief of the Staff himself. If he should have any doubt in the matter, he should not hesitate to cause the officer in question to be called up, and he can then act as the latter may direct.

All possibility of delay as regards the action to be taken on in-coming matter being thus avoided, it is necessary to take measures to ensure that all out-going matter shall be quickly and safely forwarded.

The actual office work entailed by the *preparation* of orders is perhaps what offers the least difficulty, for by judiciously selecting the quarters assigned to the various members of the Staff, appointing fixed meal hours for all, and assembling all the officers several times during the day at times when experience shows that orders from above or reports from below are usually received, there is little fear of any difficulty arising from the Staff finding itself shorthanded. Finally, the General Commanding the Army, or, as the case may be, Army Corps, and his Chief of the

* It is very desirable that the office should have one entrance only.

† Men, belonging to every variety of unit, who have become separated by accident or otherwise from their comrades, are constantly reporting themselves at the offices of the various Staffs, with a view to rejoining. The officer on duty should consequently be prepared with sufficient information to furnish them with the directions they seek.

General Staff, should never be both absent from headquarters at the same time, so that somebody may always be present who is accurately informed of the actual state of affairs and plans contemplated.

There is far more difficulty in *forwarding* orders and reports to their proper destination. When the distance is great, it has to be done either by telegraph, railway or relays of mounted men. If the distance be small, the safest plan is to send several copies by different individuals, such as orderly officers, orderlies, or *Feldjäger*. The latter being specially trained in carrying despatches, and organised for that purpose, may also be used in cases where the distance is very considerable.

As a rule the Field Post Office should only be resorted to for correspondence of minor importance, and requiring no immediate despatch.

The telegraph is a rapid and sure means of communication as long as the line is not interrupted, but this may happen either by the act of the enemy, or in consequence of accidents or meteorological disturbances. Any interruption, however, is at once known by the telegraphist, and some other way of communication can then and there be substituted. To guard against the possibility of a message being intercepted and falling into the hands of the enemy, telegrams may be sent in cypher, in addition to precautions being taken to ensure the safety of the line. This plan may, of course, also be followed when it is desirable that any communications should be kept secret, or when there is a risk of the message carried by orderlies independently of the telegraph, falling into the hands of the enemy. In any case an answer by telegraph should invariably be asked for at the conclusion of the message, stating whether it has been correctly received. Cyphering and decyphering a telegram invariably occupies, however, a certain amount of time. Finally, any mistakes that may occur in telegraphing a message may be rectified by the receiver being asked to repeat the telegram to the sender. Which, if any, of these measures of precaution should be taken, must always depend on circumstances.

Messages sent by telephone are liable to be overheard, and care is necessary to avoid misunderstandings.

All the higher Staffs should nowadays be provided with motor cars. They mean a great economy of time and strength, for they will generally obviate the necessity for long rides. For further details as to motor cars, see Section C of this chapter.

In cases when a despatch of a lengthy nature, such as "detailed instructions," has to be sent, the telegraphing of which would monopolise the use of the line for a long time, a messenger may be despatched by railway. This plan may also be resorted to when the telegraph line alongside the railway in question is out of order. It may sometimes even be expedient, in cases where traffic on a line has not been completely established, or has been temporarily stopped, to try to forward an important despatch requiring immediate delivery in charge of an officer on an engine.

In the absence of telegraphic or railway communication, the system of mounted relays has to be resorted to. The instructions for their establishment and disposal are contained in the F.S. Regns., sects. 99 to 105.

When the distance is small and no chain of mounted relays has been regularly established, despatches must be sent by special mounted messengers. The importance of the contents of the despatch or order, the difficulty likely to be experienced in finding the best and shortest way, the chance of falling in with the enemy, and the actual distance to be traversed, are questions that have to be taken into consideration in deciding whether mounted Staff orderlies, single officers, or *Feldjäger* should be sent; or again, whether these should be escorted by orderlies or even by more or less numerous detachments of Cavalry. It may be well, indeed, to send the despatch or order in duplicate or even triplicate, this extra precaution naturally depending on the importance of the contents and degree of risk. Similarly, it is desirable, if there be any danger of the despatch falling into the hands of the enemy, to send the communication in cypher.*

* It is not proposed to deal in this work with the various expedients and artifices that may be resorted to by the garrison of a besieged or blockaded fortress to communicate with the exterior, or *vice versa*, by the friends of the garrison to communicate from the exterior with the besieged.

As a rule it is unnecessary to have horses always kept ready saddled and bridled at the different Staffs. A certain number of orderlies always ready in attendance generally meets the case, for the time taken in drawing up and preparing a despatch or order lasts, as a rule, much longer than that taken in putting the saddle and bridle on a horse. The orderlies told off in attendance can consequently be warned in time to be ready to mount when their services are required. Cyclists may also be used.

It may perhaps be mentioned here that in the campaign of 1870-71 the *Feldjäger* were often, in an entire or partial absence of railway communication, of invaluable service in carrying despatches for long distances under the greatest difficulties. By their courage and judgment they often succeeded in reaching their destination through the enemy's country, unprotected by any escort, using post-carriages with relays of requisitioned horses.

The above may be taken as a brief description of the way in which the more important duties in the office work of a Headquarters Staff are carried on, but it is neither possible, nor is it indeed necessary, strictly to carry out the same system in detail on a small scale—on a Divisional Staff, for instance. Cavalry Divisions, having unlimited means as regards mounted orderlies and the transmission of messages, form of course an exception, but in the case of Divisions or even Army Corps forming part of Armies, the comparatively small extent of ground covered by each considerably limits the work entailed in the safe and rapid transmission of orders and reports. The measures taken to ensure this must in each case be modified to suit circumstances.

Finally, it may be mentioned that as sufficient information for drawing up orders for the following day's operations is very often not received till late in the afternoon, the issuing of orders cannot take place, even to the highest commands, till somewhat late in the evening. This means that the lower Staffs and commands must be kept busy until late at night. To avoid the serious inconveniences that such work, if continued for any length of time, would cause the officers

concerned, it is very desirable in forwarding orders from the headquarters of an Army Corps or Division, to arrange matters so that, if possible, they may reach the various Commanding Officers concerned early on the following morning, and not disturb their night's rest,

B. ORDERS!

To secure the initiative must be the first object in the mind of a Commander, when he is considering the general situation and the solution of problems involved in it. It is rarely possible in war to count upon information to hand giving a clear picture of the situation and of the enemy's plans.

A Commander must be able to divine the intentions of the enemy from the most incomplete reports and to fill in by his own judgment what is missing. Complete information will usually only be obtained by means of a battle. It shows a want of decision for a leader to wait for further information in order to be quite sure, and thereby to let time and opportunity for meeting the enemy and gaining freedom of action for himself slip by. In war almost everything is uncertain, and since this uncertainty usually affects both sides, the leader who dares something gains the inestimable moral advantage of decision of purpose. Sometimes the desire to adopt the best possible measures causes decision to be delayed and leads to pedantry. It is necessary to act quickly and to the purpose. Prompt decision and a rapid disposal of the force available will frequently more than compensate for any inferiority in numbers, and pave the way for the defeat of an enemy who is inactive though superior in numbers.

In aiming at rapidity the decision must not, however, be over-hastily formed or influenced by an under-estimate of the enemy's strength. The enemy must be given credit for taking the best measures to thwart the intentions of its opponent. But the

quicker action follows upon decision, the less time will the enemy have to meet it. A knowledge of the personality of an opposing Commander may have an important influence on the decisions arrived at.

The difficulty of command increases with the size of Armies. While a small, closely concentrated body of troops can carry out an order in exact accordance with the Commander's intentions, loss of time is involved in transmitting orders to very large commands, and the intentions of the Commander-in-Chief can only be carried out with the co-operation of a large number of subordinate Commanders acting independently; the more the latter act in accordance with the intentions of the Commander-in-Chief the more certain and the greater will be the success attained.

The decisions of the Commander-in-Chief are conveyed to the troops in a form which appears in the simple word of command and in every intermediate step up to detailed instructions for carrying them out. It is not possible to arrange for a model form which will suit all cases, since the composition of orders is a work requiring knowledge and trained military judgment. The example giving the various headings, and their proper places in an order, in F.S. Regns., sect. 53, is only to be considered as a guide showing how orders may be simplified, so as to be more easily understood by the recipient. Changes in orders after they are issued usually cause the troops increased fatigue and weakens their confidence in their Commanders. Such changes are usually caused by orders being prematurely issued, or going into too great detail and therefore being later found unsuitable. Although the Commander must always therefore avoid anticipatory orders, yet he must, of course, make his plans in anticipation of events without publishing them in his orders.

For the above reasons absolute precision in orders is not always possible. Still, in no circumstances should a Commander issue a vague order from fear of responsibility, for subordinates have the right to know as much as possible of the intentions of their superior, so as to be able to act in accordance therewith. In

view of the importance of what is at stake, the composition of orders is far more important in war than in peace, and the effect of every word upon the recipient should be weighed. It is usually best for the writer to imagine himself in the recipient's place.

But the most carefully thought-out measures may come to grief if events happen which could not have been reckoned on, *e.g.*, apparently incomprehensible movements of the enemy (the reason for which it is impossible to fathom), misunderstandings by subordinates, late arrival of troops owing to unforeseen difficulties in the transmission of orders, bad weather,* or railway accidents. In such circumstances it is necessary to decide whether to persist in the decision which appeared correct at the time, or to recognise the changed circumstances and issue other orders. It is difficult to decide what is the boundary between determined execution of the plan decided upon and obstinate adherence to an idea which has not kept pace with the march of events. It requires a great General to hit upon the right line; this is an art which is innate in a great leader and is not easily acquired.

March orders are those which occur most frequently during the course of warlike operations. (*See F.S. Regns.*, sect. 306, last sentence.) They should not invariably be drawn up on the supposition that the enemy is to be met with, but the possibility of such an event must, nevertheless, never be lost sight of, for experience in past wars has shown that battles are generally the result of unexpected encounters with the enemy.

March orders will usually be limited to what is necessary to inform the troops as to the intention and objective of the march, the composition of the columns, the time of starting and the measures for security. Further details will be kept back to await such information as may be obtained during the march, and all possible causes of interruption will be carefully considered beforehand.

If the possibility of falling in with the enemy is out of the

* Part III, Ch. IV B, "Marches in the presence of the enemy."

question, march orders merely mean, so far as the troops themselves are concerned, arrangements for the movement from one place (or rayon of quarters) to another. They would then be drawn up mainly with a view to ensure the necessary movements taking place without any crossing of strong columns on the line of march.

The Field Service Regulations do not recognise so-called "Battle Orders." The orders which lead up to a battle usually appear, as has been mentioned already, in the form of "March Orders," *i.e.*, the troops are in the first instance set in motion in the direction in which the enemy is supposed to be. If there have been opportunities of reconnoitring the enemy, or if the situation and early information allow of clear deductions as to the enemy's probable intentions being drawn, movements may be ordered in advance which will prepare for and lead up to the battle in the way desired. This will, as a rule, only happen when the rival forces have been face to face for some time, or when a defensive position has been occupied which the enemy will probably attack.

In issuing Orders for Battle, even when the object in view is well known, no attempt should be made, in giving instructions, to go beyond what in all probability, judging from the circumstances of the case, can be carried out. Everything beyond this must be reserved for orders to be issued during the impending battle. It is absurd to attempt to give instructions in detail to meet the various and possible contingencies that might occur. Experience in past wars shows that when this has been attempted some unforeseen event has usually occurred which has taken the subordinate leaders, tied down by other instructions, by surprise and interfered with their initiative. Orders which go into too great detail, trench unnecessarily upon the provinces of the subordinate Commanders, deprive them of the responsibility of forming their own conclusions, and may easily get them into the habit of waiting for orders. But in battle the initiative of Commanders of all ranks within the limits determined on must always achieve the greatest results. This is essentially the principle

upon which the German system of military training is based, and it must be carefully kept in view in framing orders for battle.

The chief duty of an officer of the General Staff, in the preparation of orders, consists in arranging for his General in a convenient form the facts necessary for an appreciation of the situation. He must compare the information sent in from higher authority, or from neighbouring commands, with the reports from his own reconnoitring troops and from his spies. He must complete them and put the result upon the map whenever possible. The picture so obtained can, however, rarely pretend to be complete or reliable. For even when the information received is very full, there remains the serious difficulty of extracting the truth from the large number of reports received, many of them contradictory. The more or less inherent probability of individual reports, which are often very varied in character, must be estimated in accordance with the general situation. Besides this, the characteristics of those who furnish the reports, the proved reliability of any particular body of troops, and perhaps, too, occasionally some information which has been received several days before and was then considered incorrect, have to be taken into account. The correct appreciation of information is therefore usually the result of experience, though many men show at once that they have a gift for this kind of work. The labour is much increased when a large number of reports come in at once at a critical juncture.

When the Commander has come to a conclusion, based upon the work of his General Staff officers, it is necessary to reduce it to the form of an order as quickly as possible; if the General Staff officer knows his work he will be able to relieve his superior of the petty work of composing the order.

During a battle the General Staff officer should remain with his General, in order to be able to assist him in the work of issuing orders. He should only leave his superior in exceptional circumstances, and with the latter's express consent. It is often one of the essential duties of a Staff officer to make judicious proposals

for action, without in any way attempting to interfere with the command of the troops in battle. The loyal relations between the Commander and his first assistant on his Staff will naturally cause the former to pay attention to, and to further, the views of the latter. This will be most apparent in the case of the Staffs of Armies and of Army Corps, where the high position and ripe experience of the Chief of the General Staff carry weight.

Other duties of a General Staff officer in battle are to collect and put together the verbal and written reports as they arrive, to reduce the former briefly to writing, and always to mark all reports with the time of receipt (on the larger Staffs an officer is specially charged with this duty), to compose, punctuate and despatch the reports intended for higher authorities if a reporting officer is not specially attached to the Staff for this purpose; to keep a watchful eye on the requirements of troops as they arise in the course of battle, *e.g.*, the establishment of the chief dressing stations, the supply of ammunition, the despatch of wounded and prisoners, the bringing up of supplies. For these services the Departmental officers attached to the Staff require carefully thought-out suggestions and the necessary information as to the situation; the troops too have to be kept informed.

If a General Staff officer is sent on a special mission, it will usually consist of one of the following duties: Reconnoitring the enemy and the country in his vicinity. Examining and reporting on fighting which is going on beyond the General's power of observation, and on the position of his own and of neighbouring forces. Conveying important orders, which may require to be modified by him in accordance with circumstances to carry out his General's intentions. (The Commander who receives such orders must be informed of the circumstances which affect them. A General Staff officer should usually speak with great caution to subordinate Commanders and to the troops, and should never spread depressing information.) Guiding various detachments and indicating to their various Commanders the best roads and directions to be taken.

If the enemy is to be attacked, a rapid reconnaissance of

his position and of the ground that has to be crossed is one of the first essentials. Next comes the duty of seeking for and selecting good positions for artillery, the question of making detachments that might appear desirable, and finally explaining matters to officers holding minor commands charged with any special mission. In most cases the General would rarely have time to do more than merely assign the latter. The question of bringing forward at the right moment troops temporarily held in reserve, as well as even some of the supply and ammunition columns, must also be constantly borne in mind as the action progresses. Finally, there is the examination of wounded or unwounded prisoners taken in the course of the fight on matters on which they are likely to be able to give information.

When acting on the defensive a sharp look-out must be kept for the enemy's advance, and especially for the deployment of force in a clearly indicated direction of attack. The flank which the enemy appears to be threatening must be very closely watched. With this is connected the question of taking proper counter measures for defence—a matter essentially depending on a constant and intimate acquaintance with the disposition of one's own troops. Of these as many as possible, in addition to those regularly detailed as reserves, should, when on the defensive, be kept as much as possible available for use in any direction. Troops, the fighting strength of which has been exhausted to the utmost, can thus be all the sooner relieved from the fighting line and withdrawn to positions of greater security. The latter then become points on which stragglers may be assembled. The right moment for bringing forward and utilising reserves, and above all things, the right opportunity for either a partial or general offensive movement, must always be watched for.

In consequence of the experience of peace manoeuvres, views are often expressed on the question of breaking off an engagement which are not in accordance with the facts of war. With the armament and tactics of the present day, battles can only be broken off in their early stages when the ground is exceptionally favourable, and even then the results are often very similar to

those of defeat. The time for deciding whether to oppose the enemy or to avoid a decisive engagement is very short, and the necessary orders will often not be issued in time to allow of the troops being set in motion in accordance with the Commander's wishes. It is therefore very important to be informed as early and as accurately as possible as to the enemy's strength. But experience shows that this knowledge is usually first obtained in war in the course of a battle, frequently indeed after the battle is over. A Commander will therefore rarely be convinced of the necessity of retiring till a large part of his force has become engaged, and thereby involved with the enemy.

The most useful arm for the purpose of breaking off an engagement is therefore Artillery. If it has been possible to withdraw the guns under cover of the ground, and to take up fresh positions in rear, the first Infantry to be withdrawn can be effectually supported. But in any event a considerable part of the Infantry must be sacrificed, for they may either have to cover the withdrawal of the main body by making an obstinate stand, or may have received the order to withdraw so late that they are obliged to hold on to the last against the advancing enemy.

Now since, as has already been mentioned, the exact strength of the enemy will frequently not be discovered through the ordinary measures of reconnaissance, cases may arise in which a Commander may order a reconnaissance in force. But it is necessary to be absolutely clear on the point that such actions can very rarely be broken off at the desired moment. A reconnaissance in force should only be resorted to as an introduction to decisive engagements, so that the troops pushed forward may be supported at the right moment by the main body.

When the action is over, the General Staff officer has first to see to the fighting efficiency of the troops, and consequently the first thing to be done is to re-form them in their units, which become always unavoidably mixed up in battle. This not only re-establishes order in general, but the operation of bringing forward supplies and ammunition and transport is much facilitated. Otherwise the transport is kept moving

to-and-fro, and this not only prevents the troops receiving their supplies until a late hour, but by crowding and blocking the roads interferes with other traffic, and prevents for instance the wounded being properly conveyed to the rear.

The value of a pursuit is in theory an undisputed fact; but in reality it requires energy of no ordinary kind to take one up and carry it on vigorously. The victor is in most cases just as exhausted after an action as the vanquished. The harder the fighting has been, the greater will be the satisfaction with which one side sees the other give way. Again, there is a natural hesitation to risk the prize that has been won at such sacrifices by prematurely committing the only troops that still remain intact to a pursuit with the chance of their suddenly coming upon fresh reserves of the enemy. A General is only in a position to see the state of his own troops, which, of course, must leave much to be desired, and he cannot, for the time, fully realise the far worse condition in which the fighting has naturally left his opponents. There is, besides, the natural tendency coupled with a feeling of thankfulness, to pay immediate attention to the exhaustion of one's own troops, who have in most cases already gone through far more than a hard day's work. All this is human and has its weak side.

The less, then, the officer of the General Staff has actually to do with the fighting, the more may he be expected to keep himself free from the depressing effects that even a victorious action produces. He should think of adding to, rather than rejoicing over, the success that has been obtained. But to add to a victory the enemy must be pursued with every available man and horse till utter exhaustion brings everything to a standstill. What the pursuer leaves in rear he afterwards recovers, but in the case of the pursued, it falls into the hands of the victor.

The General Staff officer must consequently have recourse to those troops that are best fitted and most ready to take up the pursuit. These would, when practicable, be those in advance, who can move most rapidly. The defeat of an

enemy is immediately followed up on the field of battle by Cavalry and the long range fire of Artillery. Pursuit beyond this must, as a rule, be left to Cavalry provided with Horse Artillery. If the fighting only ceases as darkness comes on, Infantry would have to lead the pursuit, as Cavalry is too much exposed to serious accidents in the dark. But Cavalry should closely follow the Infantry, to be well up and ready to act on their own account on the first streak of dawn. The more Cavalry is able to effect on the morning and day following the victory, the better. But for this arm to be successful when opposed by a rear guard of the enemy composed of *all* arms, it must be favoured by certain topographical advantages which cannot be always reckoned on. Infantry and Field Artillery must consequently follow closely to afford support to the Cavalry when difficult positions are met with.

The greatest dash and enterprise in the pursuit must, however, be accompanied with a certain amount of caution, especially with a view to prevent the leading troops from being surprised or falling into ambushes. This requires a numerous and efficient Cavalry. If the enemy be superior in this arm, pursuit would soon be checked through our inferior means of reconnoitring and scouting, and consequent ignorance as to the right direction to be followed.

An advanced guard, composed as the urgency of the case might best permit, must be closely followed by columns of troops in their proper order, both to support, and when a suitable opportunity is offered, to relieve it.

If it has been clearly ascertained in the course of the first day's pursuit that the enemy is retiring in great disorder, night attacks are advisable. These have a most demoralising effect. But to attempt such a course in the face of an enemy whose order is still unshaken is the more unjustifiable, as the ease with which night attacks are repelled only tends to raise the enemy's self-confidence.

In addition to a direct pursuit, the advance of another column in a parallel direction would often have a most desirable effect,

inasmuch as it would constantly threaten the enemy's rear guard in flank, and force it to hastily retire. And if by any chance such a manoeuvre could be hastened by using the railway, the enemy might be anticipated at important strategical points, and if not cut off and destroyed, at any rate pushed off his original line of retreat.

In every engagement the possibility of being worsted and having to retire must never be ignored. The direction of such a retrograde movement is a strategical question. How a retreat in such a direction may be ensured is a tactical one.

The question has often been raised whether it is well in framing orders for a battle or engagement to take any measures for retreat in case of a reverse. Opinions have been always decidedly against such a step, from what might be termed, for want of a better expression, moral military considerations, and such considerations should by no means be ignored. There is again the question whether, when we make up our mind to accept a decisive battle, it is either necessary or desirable to give directions as regards a possible retreat. This must certainly be answered in the negative.

A retreat can only be determined on when all hope of being able to continue the struggle is at an end. But it would be always a very doubtful matter whether there would then still remain the possibility of retiring in the most desirable direction, for it must be taken for granted that in the majority of cases such a line of retreat would not have escaped the observation of the victorious enemy, and the side that is giving way would probably be pressed off the field of battle in, perhaps, the least desirable direction. Any order given at the outset of the action and defining the line of retreat to be taken in case of a reverse would then be of no real use. If the enemy does not press in pursuit, each body of troops would naturally retire, as a rule, in the direction whence it advanced. Besides, the subordinate leaders knowing, as they would know, the general positions of their baggage and supply columns would at once see for themselves in which direction it was most desirable to retire, so

as to preserve (or as the case might be, regain) their communications.

But though directions as regards the line of retreat are to be avoided in orders for battle, it is nevertheless the duty of those in command carefully to consider every circumstance bearing on the point, and to be prepared to issue promptly the necessary instructions on the spot in case of failure. These considerations may be expressed in secret instructions issued to immediate subordinates.

The most important point is the existence of a good rear guard position close at hand, and a country behind this with numerous roads and points where the beaten forces may be conveniently assembled.

The steps that may be necessary with a view to reconnoitring the country before retiring, should at the latest be taken when there is the slightest appearance of the tide of war turning against us. One of the most necessary precautions is a careful reconnaissance of the roads to be followed, taking steps to have them clearly indicated to the retiring columns by night. Otherwise the most disastrous mistakes may be made. The supply and ammunition columns and baggage should at once be quickly moved to the rear, so as to leave the roads clear for the movement of the retiring troops. Only what is absolutely necessary for replenishing ammunition and issuing supplies should be temporarily withheld, and for the time posted at suitable points, *i.e.*, where they would be afforded some natural protection.

The General Staff must lose no time in the matter of establishing as soon as possible proper order in the various columns of route. It can, however, hardly be expected that the proper order of the troops in column will be maintained for the first few hours. We must consequently, under certain circumstances, be satisfied if we manage to get the different battalions, squadrons and batteries into column of route, regardless of their proper order, provided they are complete and orderly in themselves. The first consideration, and one to which others must be made subservient, is to get a start of the enemy with

our main forces. If we succeed in doing this, the order of the various units can all the sooner be re-established in the next day's march.

Troops, the fighting strength of which has been least impaired, or which are most reliable, should be chosen for the rear guard. They should, as circumstances may require, be reinforced by Cavalry and Artillery.

The General Staff must never relax its efforts in assigning to the troops the best roads and lines of retreat, procuring them good supplies (a matter which may often decide the fate of an engagement), and finding them comfortable quarters.

A successful encounter will, however, better than all this, tend to raise the spirits and re-establish the shaken *moral* of troops that have been worsted. The General Staff should constantly endeavour to bring about such an issue, especially by seeking a favourable opportunity for suddenly falling on the heads of the pursuing columns.

It finally remains to be seen what instructions should be included in Orders as regards baggage and supply columns. It is desirable, in the first place, that the subordinate leaders should be informed in orders of the general positions occupied by these formations. It is very necessary besides that they should be furnished with precise information as regards the whereabouts of those particular units (such as, for instance, ammunition columns and field hospitals) which are to supply the immediate requirements of the troops they command during the coming engagement. The Officers Commanding supply and ammunition columns receive special instructions as to their own duties, with general information on the other measures taken.

As a rule orders received from a higher authority are not transmitted literally to those below with additional instructions or observations. Each General in command inserts in his orders anything that has been communicated to him by his superiors which it may appear to him desirable that his subordinate leaders should know.

On the Army Corps, Divisional or Brigade Orders being framed, all officers belonging to the Staff, as well as the orderly officers temporarily attached, should be accurately informed of their contents. They can only thus be expected to carry out without fail any special mission with which they may be entrusted whilst such orders are being carried into effect, or to transmit instructions and give satisfactory answers to the questions on them that are sometimes asked by subordinate leaders.

Similarly, the Intendant and Surgeon-General of the Staff should be furnished with the general contents of the orders. They are then in a position to take any steps that may appear necessary to ensure supplies and the efficient working of the Medical Department.

C. THE INTELLIGENCE DEPARTMENT.

The duties of the Great General Staff in collecting information in peace and war about the enemy's Army have already been discussed. This information forms the chief basis for the concentration and for the early operations of our own Army. The Intelligence Department must therefore be in constant communication with those whose duty it is to work out the probable movements of the Army. The duties of the Great General Staff at headquarters, and also on the Army and Army Corps Staffs, are regulated accordingly.

Information does not merely provide the Commander-in-Chief and the higher Commanders with the basis upon which their orders are prepared; some knowledge of the information which particularly affects them and the situation of their troops is essential to subordinate Commanders of all grades, in order that they may execute the orders of the higher Commanders effectively and intelligently. For this reason almost all operation orders begin with the information about the enemy. (F.S. Regns, paras. 53, 58.)

It is of course the duty of troops while engaged in active operations to use all available means of obtaining information for their own advantage, and, what is equally important, to keep neighbouring troops and the higher Commanders informed of the intelligence.

In order to facilitate the transmission of important intelligence from the troops engaged in the first line, Reporting Officers will be attached by Commanders to units, as required. Experience shows that reports on the situation are only received at rare intervals from the first line, because the whole attention of the Regimental Officers is naturally taken up with fighting. Reporting Officers will, therefore, often be the only means by which Commanders will be enabled to supervise the battle in its whole extent.

The arm which is specially charged with reconnaissance work, the Cavalry, is trained for it in peace (F.S. Regns., paras. 81-105, 119-133). In regard to this, the solution of the most important strategical problems has to wait for information from this arm throughout the war.

Balloons are another means of obtaining information at the disposal of the Intelligence Department. On field service captive balloons are chiefly employed in order to obtain early information about the enemy's advance and to provide an observation post in battle. But since balloon reconnaissance is limited by weather conditions, hilly country, woods, and other circumstances, it can only supplement Cavalry reconnaissance and not take its place. During the march the Officer Commanding the Balloon Detachment is with the Commander; the latter issues orders what to observe and when and where the balloon is to ascend. If the enemy is met on the march, the balloon must ascend as early and as near the enemy as possible, if it is to be of service; the detachment should therefore be attached to the advance guard when it is intended to be used. (F.S. Regns., paras. 185 and 147.) During an attack on a prepared position it is best for the balloon to remain where it can continuously observe the enemy. Changes of position will usually be

ordered by the Commander of the troops. An officer of the Balloon Detachment is generally the observer, but it may be of advantage to have the observation done by a General Staff officer, trained in balloon work and in observing from balloons. Connection between the balloon and earth may be maintained by telephone or by means of pockets attached to the balloon. A drawing or a sketch showing the position of the troops will often be more in place than a long written report.

Dirigible balloons would often be of great advantage to the Intelligence Department. These are being so steadily perfected that it is only a question of time when they will be available ; the conduct of war will then enter upon a new phase.

In siege warfare captive balloons are used in a similar manner and also occasionally free balloons. The attacker uses the latter to sail over the enemy's fortress and observe his works ; the defender to convey information from the besieged fortress. There is little risk of a balloon being hit by shells, for shooting can be made very difficult by changing the elevation of the balloon. When hit a balloon falls very slowly. Captive balloons are used with advantage in the Navy for reconnoitring at sea, where the radius of vision is naturally much longer than on land. Balloons may be used at night to flash signals which are visible for great distances.

Motor-cars on good roads are an important means of conveying information. The very great speed of some of the motor-cars we possess is only of use for racing purposes ; it is not of any military value, because the cars are very quickly worn out by it and very easily break down. Our military motor-cars can do 36 miles an hour ; it is calculated that they will average 15 miles an hour in war.

The telegraph remains the most important means of conveying information. The telegraph system in war is divided into four sections :—

1. The Imperial Telegraph system of Germany.
2. The Line of Communications system, which connects Germany with the Armies.

3. The Field Telegraph, by means of which the Army and Corps Telegraph Detachments connect the Armies and Army Corps with headquarters and with each other.
4. The Cavalry Telegraph, which can only be read by ear and therefore is not entirely satisfactory.

The optical telegraphy apparatus consists of a lamp of high illuminating power connected with a lens and heliograph; the beam is visible up to 30 miles by night and 15 by day. But in war stations should not be more than from 9 to 12 miles apart.

Wireless telegraphy has, without question, a great future before it, as soon as the existing disadvantages of its use have been successfully overcome. Its usefulness is at present limited because stations interfere with each other, and messages may also be read and interfered with by the enemy. Messages are transmitted in the Morse code and may be read by ear up to a distance of 60 miles, and automatically transcribed up to a distance of 30 miles.

At home the Frontier and Forest Guard and the postal and telegraph employes, whose duties accustom them to the collection and dissemination of news, will be able to render valuable assistance, but this will cease as soon as the enemy has been met. The reports of inhabitants are generally to be accepted with caution, because the natural tendency to exaggerate any exciting news is usually highly developed among them. The reports of spies also should be confirmed before they are accepted. Most spies are only anxious to obtain money without really earning it in a service which is almost always hazardous. The greatest caution is required because of the comparative security a spy enjoys when playing a double part, *i.e.*, serving both sides. It is therefore the rule that spies are to be interviewed whenever possible in the outpost line, or at some point where they cannot gain information of what is going on on our side. In order to test the reliability of spies, several may be given the same duty to carry out at the same time, without being informed that this is being done. But in any case this form of intelligence work is always unsatisfactory, and in 1870 it failed at the beginning of the war.

Special attention should be paid to our own and the enemy's newspapers, and also to those of neutral states; it is well known that the latter frequently publish information about the movements of the Armies. For this reason a careful eye must be kept upon our own newspapers, and upon the postal and telegraph services. The use of cypher for unofficial correspondence must be forbidden. By intercepting telegrams and correspondence from the enemy's country, important information may be obtained, for example, as to the *moral* in a besieged fortress. All the information which is received has to be examined and passed on both to higher authorities and to subordinates. An exception may be made in the case of all reports which are apparently unimportant or incorrect, although in forming conclusions such reports should receive attention. Urgent and important news should not only be at once forwarded to the officer in immediate command, but at the same time to the higher commanders and, if necessary, to the Commander-in-Chief, whenever it would appear that the information would reach them quicker in this way.

D. WAR DIARIES AND TABLES OF MARCHES.

All Staffs and all units down to the Infantry (or Rifle) Battalion, Cavalry Regiment, Battery, Foot Artillery or Engineer Company, single companies or squadrons, temporarily detached, Ammunition and Supply Columns and field railway and telegraph units, keep a diary of the war from the day of mobilisation or of leaving their home quarters.*

The object of this arrangement is to have an accurate record of all important events and occurrences that have taken place and in any way concern the unit in question, to collect information on practical experience gained in the field as regards organisation, armament, equipment and supply, and, finally, to furnish a narrative of the military operations from the point of view of the unit concerned.

Information must be entered referring to daily occurrences,

* There are special regulations on the point which are attached to every diary.

that is to say, as regards marches, engagements, outpost duties, and matters of a similar character; the nights the force in question has bivouacked or been quartered and the state of the weather. Copies of all reports furnished on engagements should be added, as well as lists of casualties in officers, men and horses, after each collision with the enemy.

The original diary is retained by each unit after demobilisation, but a certified copy of the same, with enclosures, is transmitted to the War Ministry. The latter keeps all matter referring to questions of organisation, which should be kept separate from the remainder, but forwards the actual diary itself, with all supplementary matter referring to engagements, to the Great General Staff, with a view to its being filed in the War Archives.

There is no necessity to show how important it is to carefully and conscientiously keep diaries of this description, both in the interests of the individual officers and units concerned, as well as to furnish reliable *data* for a trustworthy and accurate history of the war.

On the Staffs of Armies, Army Corps and large units, an officer of the General Staff is detailed to keep the diary referred to. He at the same time has charge of and keeps the *Tables of Marches*.

The following table may be taken as an example of one for an Army Corps :—

Table of Marches of the —th Army Corps. July, 19 :

Corps, &c.	11th.	12th.	13th.	14th.
Headquarters	A	E	J.	} Battle at L.
—th Infantry Division ...	A	E	} bivouac between J and K	
—th Infantry Division ...	B	F		
Supply and Ammunition Columns	C	H	H	} Moved to K in the afternoon.
Detachments..	R	F		
	Detachment of Colonel O.	Detachment re- joined the —th Infantry Divi- sion.		

Under the heading of "Detachments" should only be placed such forces as are detached with a definite object by the General Commanding the Army Corps. Should a Cavalry Division be attached for the time to the Army Corps, it would be given an additional horizontal line.

E. REPORTS ON ENGAGEMENTS AND LISTS OF CASUALTIES.

By a "Report on an Engagement" is meant the account which every Unit is called upon to furnish to its immediate superiors of the part taken by it in the action, *as soon as possible* after it has ceased. In addition to these, short reports will be rendered immediately after fighting is over, giving in a few words the result, together with any steps taken to follow up the success gained, or cover the retreat, as the case may be.

A report on an engagement contains a compilation of facts and a detailed account of what has taken place. But on no account whatever must reports be delayed for information of this description, nor must information thus obtained be allowed to outweigh the immense importance of *at once* forwarding reports on impressions gained at the time. All Generals holding commands, and all officers commanding units, must consequently at once forward their respective reports without waiting for the reports of officers under their orders.

The higher the command held by an officer, the less will be the amount of detail contained in his first report of an action. No apprehension need, however, be entertained as regards a want of this, for it is well known that units generally give too much rather than too little. The contradictory evidence which naturally must occur in comparing documents of the kind is left to be settled later on, when additional reports are called for by higher authority. Indeed, such reports are often drawn up and forwarded, uncalled for, owing to errors having been subsequently discovered, or other causes. A request is even sometimes added to a report forwarded directly after an engagement, to have it returned with a view

to its being corrected or modified. Such a request should never be granted; for in spite of the many inaccuracies which a report written immediately after an action may contain, it possesses, nevertheless, a real value, as it gives the first impressions of the officer forwarding it.

To extract and compile from this mass of reports, enclosures, and supplementary evidence and finally write a history of the war with the greatest regard for truth and accuracy, and at the same time faithfully place on record the services performed by different units, is a matter left to those who have *afterwards* to undertake this somewhat thankless task.

We are now, however, merely dealing with the question of furnishing Generals Commanding Armies and Army Corps with every kind of information that may be necessary for effectually carrying on operations against the enemy.

The report of an officer in command of a strong force should contain information on the following points:—Circumstances under which the action took place, giving the time at which it began; any remarks on the ground forming the scene of the engagement; strength, positions, or advance of his own or the enemy's forces; written or verbal orders issued; critical or decisive phases in the engagement; close of the engagement; result; positions or movements of his own and the enemy's forces after the action; steps proposed to be taken immediately, or, as the case might be, in the next few days; conclusions as to enemy's immediate or future objective; information and description of the enemy's forces that have taken part in the engagement, with the names of the Generals commanding.

It is evident that the kind of information which should be given must vary more or less in detail according as the force in question has been acting independently or in co-operation with other forces under the immediate direction of a General in command of all the forces present.

Finally, a detailed list of casualties in officers, men, horses, and guns, and of military trophies and prisoners taken

from the enemy should be added. Attention may also be drawn to any very distinguished feats or actions performed by individuals, or units. Notices of the latter description may, however, be afterwards forwarded with recommendations for decorations and rewards.

Lists of casualties are made out on the prescribed form which units take with them on service. They usually take two or three days to prepare.

F. DAILY REPORTS.

"Daily Reports" are furnished by detached forces acting independently, in accordance with general instructions, and consequently not acting under orders received from day to day.

Daily reports should contain the following:—Narrative of the events of the preceding day, together with a report on any engagement, should fighting have taken place; summary of all information that has been acquired concerning the enemy; and a statement of steps contemplated for the following day or days, with special reference to the place where it is proposed to establish headquarters, and the most effectual way of maintaining telegraphic or written communication.

This does not, of course, prevent short, concise messages, giving a summary or abstract of what will be sent in the daily report, from being previously forwarded with the utmost despatch. Such a step is often of the highest importance to the detached force.

G. ORDERS OF THE DAY AND PROCLAMATIONS.

"Orders of the day" comprise everything not immediately connected with the direction of warlike operations. They take the place, in the field, of General or Garrison Orders, and are, as a rule, prepared and drawn up by the Routine Staff.

In all cases where the efficiency of the troops is in any way concerned—as, for instance, in questions of reinforcements, remounts, fresh supplies of *matériel*, arms, ammunition, the sanction of extra rations, orders on the subject of guards or

orderly duties during halts of any duration—the General Staff must be referred to, and the necessary arrangements made by order through the Chief of the General Staff.

“Proclamations” form a special subject by themselves. They should not be frequently resorted to, as they thereby lose their value. We maintain in the German Army—and in this respect differ from some other Armies—that a Proclamation is not in itself a factor of considerable importance. We rather try to accustom ourselves to believe in acting quickly and unhesitatingly and saying little. There are circumstances, however, under which a Proclamation may be useful or necessary—useful, that is to say, on account of the effect which it may have on the minds of our soldiers; or necessary to make an impression on the minds of the inhabitants of the country. The tone employed must consequently vary according to circumstances.

The inhabitants of the country in which war is being carried on should be informed, shortly and clearly, of the conditions under which they may hope to escape measures of severity. The rules to be observed by the inhabitants should be accompanied by threats of severe punishment of all transgressors, and these threats should be carried out to the letter.

A Proclamation to the troops is, on the other hand, generally given in the form of thanks for, or recognition of, some signal feat of arms. Such an address is usually issued on the spot immediately after a victorious engagement has been won with great sacrifices. A few words coming from the heart of the General, and avoiding the indifference wrongly supposed to be inseparable from his high position, go straight to the heart of the soldier, and tend to dispel the impressions of the terrible ordeal he has gone through more than any outbreak of sentiment, so foreign to the German character.

It would be a great mistake to try the effect of repeating a Proclamation which has before, at a different time and place, been issued by order and known to produce a good effect. It would be too much to expect that soldiers would look upon

such a Proclamation as original. It would represent, indeed, more an effort of memory than of feeling.

A few heart-stirring words, spoken by the General on the spur of the moment at the *right* time and place, are far more powerful in their effect on the mind of the soldier than any Proclamation which is read in the same words, on *parade*, to all units. It is well to bear in mind, however, that few men have the natural gift of using the right expression on the right occasion.

CHAPTER IV.

MARCHES.

A. THE STRATEGICAL CONCENTRATION OF THE ARMY ON THE FRONTIER BY ROAD AND RAILWAY.

1. MARCHES AND QUARTERS ON THE MARCH.

At the outbreak of the war the "strategical concentration," *i.e.*, the assembly of the troops ready to take the field in the neighbourhood of the intended theatre of war is effected nowadays almost entirely by railway. It is often impossible to repair a mistake made in the strategic concentration during the course of an entire campaign. Units are conveyed in succession by different lines leading to the neighbourhood where the concentration is to take place. The fact that they cannot all complete their mobilisation by the same time makes it desirable to begin the movement of concentration with those corps which are first ready to take the field. Consequently, the movement of concentration takes place whilst mobilisation is still going on.

The time when the movement to the front of large masses of troops by rail can begin does not, however, solely depend on the time when those corps which are most quickly mobilised are ready to take the field. It also depends on when the rolling-stock of the various railways, which has first of all to be used in conveying men, horses and *matériel* to bring the Army up to a war footing, is again available in sufficient quantity to carry on the movement to the front without a check. This

can be calculated with the more confidence in proportion to the care and foresight used in making arrangements beforehand for rapidly completing the ranks to a war footing, assembling the men and horses with the least possible amount of traffic, and reducing the amount of *matériel* that has to be moved, on mobilisation, to a minimum.

But even supposing that these arrangements have been made with the greatest conceivable care, and that it has consequently been possible to commence the forward movement of troops whilst mobilisation is still in progress, even then marching by road cannot be entirely dispensed with.

This can only be looked upon as a drawback, if the concentration of the whole is delayed in consequence of a part having to move by road.

It is well to remember that the use of railways in the strategical concentration of Armies is only advantageous as enabling the operation to be rapidly carried out. The loss of the great advantages of marching by road, which formerly always had to be done and, in spite of certain losses it entailed, prepared the troops in the very best way for the coming work of the campaign, cannot be said to be now entirely compensated for by the fact that an Army can be transported by rail to the rayon of concentration practically without the loss of a man or horse. A certain amount of marching by road is consequently very desirable, provided it in no way delays the concentration of the whole Army.

Marches, moreover, have to be performed by units which complete their mobilisation at a distance from points where they can be entrained, or when the railway does not take them to their actual destination in the rayon of concentration; also by those larger units whose places of mobilisation lie near the rayon of concentration.

In the operation involved by the *movement of troops from their respective garrisons to the frontier* it is desirable to assign as the destination of each unit of an Army Corps that portion of the rayon of concentration which lies nearest it. Troops arriving

by rail, and afterwards moving into quarters by road are then much less liable to cross each other on the line of march. The length of the daily march the troops would have to perform must depend on the time available for each unit to cover the total distance, as well as on considerations of quarters and supplies on the line of march. As to the time allotted for the whole march, it is not advisable, nor is it indeed justifiable, except when it cannot be possibly avoided, to make it so short that the day's march averages more than $22\frac{1}{2}$ kilometres (14 miles) per day. Every fourth or fifth day,* moreover, must be reckoned as a halt day.

The first few days' march should, if the time allotted admits, be comparatively short. For if this is found to be advisable in time of peace in moving troops to the annual manoeuvres, it is the more so in the case of mobilisation, as it is very desirable that the men should gradually get used to their heavy field equipment, especially to new clothing, boots, belts, &c. The defects in these are less felt in a short day's march, and time and leisure are moreover afforded when in quarters to rectify evils of the kind incidental to the hurry of mobilisation.

Certain units must nevertheless be called upon to make long marches from the moment of leaving their garrisons, for important places lying near the frontier must be occupied, the garrisons of frontier fortresses may have to be quickly reinforced, or some regiments of Cavalry to be pushed forward to watch the enemy's forces and cover our own movements.

Marches to points of entraining on the railway are, as a rule, short. The network of railways in Germany is such that it requires but little marching by road to reach the railway in any part of the Empire, and by far the greater part of the Army is quartered in garrisons situated on lines of railway. Troops so placed have, of course, generally speaking, no marching to

* The rule observed in peace, that Sundays and Feast days are always days of rest, of course no longer holds good.

do at all to reach railway stations, for, even if the garrison they belong to is not actually situated on one of the main lines of railway used in the general movement to the front, they can generally reach the latter by branch lines. Difficulties would rarely, if ever, be met with in making arrangements for this.

If several bodies of troops are to be despatched by rail in rapid succession from the same place, and, owing to want of space quarters have to be taken up in the neighbourhood of the town, it is well to remember that those units which are to proceed at inconvenient hours (in the night or shortly before daybreak) should be given quarters *nearest* the railway station and, if possible, in the town itself.

The question of detraining troops in or near the rayon of concentration is one which presents far greater difficulties. Quarters must now be assigned to the troops according to the force to which they belong, but the transport by rail cannot always be arranged so as fully to meet this requirement, for the time taken by different units in mobilising in their respective garrisons, and the fact that the rolling-stock available is not always adapted for carrying the different arms must affect the order in which it is possible to forward the troops. Troops, again, often arrive by rail in rapid succession at the place where they are to detrain, and have to be moved away at once by road in order to avoid excessive crowding, yet cannot reach the points assigned them in the rayon of concentration in *one* day's march. Quarters whilst on the march must consequently be found, and it need scarcely be said, such quarters, if assigned to other troops as points of concentration, must, for the time being, be left unoccupied by the latter. This entails a certain amount of marching to and fro, which is all the more difficult to arrange, as, under these circumstances, the country is invariably strongly occupied, and special arrangements have to be made as regards supplies. The times of arrival have also to be considered. Troops arriving late in the afternoon or in the evening or night do not like to have

to march far; they prefer to go into quarters. In a long railway journey the feet swell, and if Infantry are called upon to march for any distance on leaving the train, new boots are sure to cause a large amount of footsoreness.

But supposing every precaution to have been taken, and nothing neglected to secure punctuality, a stoppage in the traffic, which is at once transmitted along the line to all succeeding trains, may cause a delay of several hours and entirely upset the arrangements made. Troops arriving in the evening might thus be called upon to march a long way to their quarters, and those arriving in the day find their quarters close by.

As it is almost impossible to change, at very short notice, the quarters that have been assigned to the troops, some luckless officer of the General Staff who is in no way to blame for the *contretemps*, and who has very likely done his best and worked hard for several days together to make everything satisfactory, generally gets the benefit of everybody's displeasure. He must never, however, allow himself to be discouraged by accidents of the kind.

From the above some idea may be formed of the difficulties met with in finding quarters for troops arriving *en masse* by rail, and of the direction in which the General Staff should chiefly turn its attention in making the best arrangements under the circumstances. In extreme cases, indeed, bivouacking must be resorted to.

Further details on the subject of quarters during this period of a campaign are given in Chapter VI.

2. RAILWAYS.

Railway communication is now so thoroughly organised in civilised countries that railways have, for certain military purposes and at certain periods of a campaign, gained a far greater importance than roads. Roads still maintain their superiority over railways in warlike operations in the presence of and near the enemy. But for the mobilisation and concen-

tration of Armies, the rapid transfer of Armies from one part of the theatre of war to another, the forwarding of supplies in the broadest sense of the term, and the transport of military *matériel* and stores of every description, railways are now of far more importance than roads.

Railways, it should be remembered, are made to meet the traffic requirements of peace and not those of war, and the laying out, construction and provision of *matériel* and *personnel* of a line of railway are consequently, in most cases, not based on military considerations. Still a line of railway may be constructed with a view to national defence, and not for commercial purposes, thereby entailing additional expenditure in its construction or working. It is entirely against the principles of the system of national defence of the German Empire to suppose that the construction of any line could possibly imperil its efficiency. On the contrary, every additional line adds to it.

Even in carrying lines through fortified places and constructing permanent bridges over large rivers, military considerations of a purely local character must be entirely subordinated to those of a general character. A line of railway may offer general military advantages, the importance of which only makes itself felt at a considerable distance from the place where local objections may be raised to its construction. These broad views as to the development of the railway system have not always been followed in the past, but it should be remembered that in former days the military use of railways was but imperfectly understood. Besides, the military organisation of the North German Confederation was then based on a purely defensive attitude.

Thus, when a new line of railway was contemplated, the first consideration, from a military point of view, in those days was whether the line would be of advantage to the enemy if in his possession, and not the question of its advantage to the system of national defence. All this is now a thing of the past, as united Germany is now in a position to make the best use of

her railway system for military purposes and thus deny its use to an invading enemy. There is, moreover, always the expedient of temporarily or permanently rendering useless such exposed lines as might be secured and used by an invader.

Apart from the number of the railway lines and the general conformation of the system, any increase in the traffic capacity of individual lines also carries with it an addition to the military strength of the country.

The arrangements for and the carrying out of the transport of troops *en masse* are dependent on certain fixed military and technical considerations. The latter, being for the time determined by physical laws and the degree of mechanical knowledge of the day, must be rigidly adhered to. Military considerations, on the other hand, admit of certain modifications, and have consequently to give way when they clash with technical difficulties.

The management of all military heavy traffic must nevertheless be kept in the hands of the military; and the General Staff, being the branch of the service to which this duty falls, must possess sufficient technical knowledge to avoid attempting what is impossible, and at the same time to accomplish all that can be done.

It must always be distinctly remembered that the amount of traffic depends on the *safety with which single trains can travel*. To ensure this, a train must travel with moderate speed, and be driven by an engine-driver acquainted with the line. Moreover, trains must always follow each other in the same direction at known intervals, and it must be impossible for trains coming in opposite directions to meet on the same line.

The *speed* with which a train is driven depends on the power and number of the engines, the condition of the permanent way, and the resistance to travelling caused by friction (inclines and curves on the line, weight and number of carriages the train is composed of, and state of the weather). A high rate of speed increases, of course, the danger of leaving the metals,

squeezing out light carriages and breaking the couplings. On the other hand, the lower the speed the smaller the number of trains that can travel over a given length of line in a certain time.

Speed, then, converts the distance in *space* necessary for safety into distance in *time*, and it is according to the latter that calculations are made. Speed is always kept below what is actually attainable, and varies constantly with the nature of the line the train is passing over. In making calculations a mean speed is generally taken. This, in the case of troop trains consisting of 120 axles (60 carriages) and under, may be taken as from $2\frac{1}{2}$ to 3 minutes *per* kilometre, or from 20 to 25 kilometres ($12\frac{1}{2}$ to $15\frac{1}{2}$ miles) per hour, or taking the average of most lines, as $2\frac{3}{4}$ minutes per kilometre or $22\frac{1}{2}$ kilometres (14 miles) per hour. This includes the necessary short halts, and the slackening of speed when passing stations.

It is a question whether this low rate of speed, which was decided upon some years ago, should not be increased in view of the improved condition of railway *matériel* in the present day. Additional appliances for safeguarding traffic have been introduced at our stations and along the lines. We have now engines of greater traction power, which can draw ordinary and express goods trains at a speed of from 21 to 36 miles an hour. A mean speed of 24 miles an hour for movements of large bodies of troops seems therefore reasonable, the more so as most drivers are not now accustomed to the low speed of 14 miles an hour. The increased rate of speed will accelerate the strategic concentration.

Want of acquaintance on the part of an engine-driver, either with his engine or the line, is a source of danger to a train. When there is only a single line the return journeys of empty trains and engines have to be provided for. They have, as a rule, to be shunted at certain stations where there are sidings to allow troop trains going to the front to pass, as it is very seldom that they can be sent back by another and separate line.

For this reason the interval in time between two trains proceeding in the same direction on a single line is more than double that between two trains on a double line for like distances. In the case of a double line, each line of metals is exclusively used for trains going in the same direction, and a train can at once start from any station (railway station, halting place or signal station) as soon as the line has been reported clear from the next station after the passage of the preceding train. On a single line, on the other hand, the arrival of the train coming in the opposite direction must be waited for, and prudence demands that the same inquiries should be made before its departure as in the case of the troop trains. The time between trains for a given distance is thus rather more than double that taken by travelling only.

The amount of traffic a line of railway is capable of, limited as above, will be relatively greater in proportion as trains move regularly in the same direction, and as all overtaking and long delays are avoided.

Drawing up and carrying out a "Time Table," which gives the successive times of departure and arrival, and the duration of halts of every train in both directions, is much simplified when the return traffic is carried on at the same relative rate as the traffic to the front. The interval between the trains shown in the Time Table is governed by the time taken by a train in moving between the two stations on the line which are furthest apart. At these stations halts are also occasionally necessary for taking up water, changing engines or the railway *personnel* of the train, examining and greasing carriages, turning engines, adding extra engines, or detaching or adding carriages. Halts of this kind, as well as those that are necessary in the case of troop trains for refreshment, increase the total time taken in travelling over certain lines very considerably. In the case of the despatch by rail of a large force, the actual time of transit only comes into the reckoning once, either as regards the arrival of the first or of the last train.

The *load* of each train is of great importance. Putting aside

the question of economising traction power, it is very desirable, in the case of troop trains, to keep tactical units together during the journey, *i.e.*, in separate trains. For this reason the greatest length of train for a battalion, squadron or battery should, if possible, never be more than 100 axles (or 50 carriages).

On inclines not greater than $\frac{1}{80}$, trains of the above description can travel with the assistance, if necessary, of auxiliary engines in front and rear, without being uncoupled. On inclines greater than $\frac{1}{80}$ for any considerable distance, a train would have to be reduced to 50 or 60 axles, and to a less number if the incline were as steep as $\frac{1}{40}$ and there were no relay of very powerful engines.

The necessity of having to uncouple* trains diminishes at once the traffic powers of the line by about one-half. The evil may, however, be entirely or partially remedied by a double line or a sufficient number of sidings at short intervals. Sidings will, under such circumstances, be all the more useful for military purposes, as the troop trains, being reduced to half their normal length, will correspond more nearly to the length of train which is customary for ordinary traffic. Whole troop trains, on the other hand, require sidings 550 yards long to enable the traffic on a single line to be carried on regularly, without being disturbed by the repeated uncoupling of trains for shunting purposes.

Traffic is always liable to be interfered with by circumstances which cannot be foreseen even with the very best and most carefully selected railway officials, and the most favourable conditions of line and rolling-stock. Such circumstances arise from weather and other causes over which we have no control, but which must, however, be invariably taken into consideration.

It has consequently been found advisable in the case of the transport by railway of a very large force lasting for some considerable time, to insert in each day in the Time Table a *period free of trains*. This period enables trains that

* Uncoupling may be also necessary where there are sharp curves and the lines are light, *e.g.*, on auxiliary lines.

have been retarded by various causes such as unavoidable delays, accidents and irregularities, to regain their respective positions in the Time Table.

There would, therefore, be in each day's Time Table an interval on each line during which trains would not be calculated to run, making a division in the stage or list of trains to be run each day, and consequently dividing the day of twenty-four hours into periods. It assists the order and regularity of the traffic if the same arrangement and succession of trains is repeated in the different periods.

Trains travelling within the day of twenty-four hours (trains of the same Section) are numbered, those travelling in one direction are given the uneven numbers, 1 to 95, those in the other, 2 to 96. If more than forty-eight trains travel in each direction the additional trains are numbered 3A, 9A, 4A, 10A, and so on. If less than forty-eight trains travel, then certain pairs of numbers are omitted.

The following is an example of a table showing all the trains travelling between two points in twenty-four hours, with half-hour intervals between trains :—

Direction I.

		1st Series.	3rd Series.	5th Series.	7th Series.	9th Series.	11th Series.	13th Series.	15th Series.
1st period	..	No. 1	No. 3	No. 5	No. 7	No. 9	No. 11	No. 13	No. 15
2nd "	..	17	19	21	23	25	27	29	31
3rd "	..	33	35	37	39	41	43	45	47
4th "	..	49	51	53	55	57	59	61	63
5th "	..	65	67	69	71	73	75	77	79
6th "	..	81	83	85	87	89	91	93	95

Direction II shows the trains with even numbers, 2 to 96, in a similar manner. The numbers in each column are those of the trains of one series; therefore in the example given above eight series of trains travel in each direction. The trains in the same series start at four-hour intervals; there is therefore half-an-hour's

interval between successive numbers of the same "direction." The capacity of a section of the line is expressed by the number of series which travel over it. In the above example eight series travel with trains at half-hour intervals, six series can travel with trains at forty minutes' interval, four series with trains at one hour's interval. In one of the periods no trains will travel, as has already been mentioned, and the numbers in it will be left out.

Trains will be allotted to the larger units by whole series, *e.g.*, if the Guard Corps is allotted Series 1, 5, 9, 13, then the 1st Guard Division will travel by Series 1 and 9, the 2nd Guard Division by Series 5 and 13.

This rhythmical repetition in the traffic is of special advantage when lines possessing different degrees of facility for traffic have to be connected up into through lines, and when, consequently, trains have to be frequently passed out and shunted from, or taken over and brought into the traffic of the several lines. In such cases trains laden with troops must often be kept waiting in order that the intervals may be properly regulated when trains are brought on to or passed out of the line. Stoppages must also be foreseen for many trains which, leaving the line on which they have hitherto travelled, have to take their appointed place in the traffic of another line, with the certainty of being ready at the proper time.

It need hardly be said that sufficient siding accommodation must be provided at the stations concerned to allow of trains coming in from both directions while other trains are already waiting in the station. Siding accommodation is similarly necessary when trains are following each other on a line at close intervals, and halts of considerable duration have to be made. The position of *points* and *cross-over roads* again plays a very important part in shunting trains from sidings or side lines to the main line, or *vice versa*. Placed to suit the requirements of ordinary everyday traffic, they are often anything but suited to the shunting of long trains such as are used for military purposes.

Thus it is evident that it would be absurd to try to compare

single and double lines, or different lines of railway, to each other, or attempt to give their relative values for military purposes by figures. Every line of railway should rather be looked upon separately, and as such estimated according to its capabilities. There are double lines in Germany on which, before certain defects are remedied, hardly one troop train could be despatched per hour, and there are others on which trains could rapidly follow each other without any kind of danger. There is no reason why, on a well-constructed single line of railway* of no very great length, and having ample siding accommodation placed at close intervals along the line, the interval between troop trains should not be even less than on a double line of the same length, on which long troop trains would have to be uncoupled on account of steep gradients or other difficulties.

In drawing up a general plan for heavy military traffic in any particular direction it is necessary in each case to ascertain accurately in detail the capabilities of traffic of each separate line under consideration, and thence form a combination giving the total maximum effort possible. It will only thus be possible to lay down exactly beforehand the number of daily through trains that can be run for the transport of a large force over several different railway systems, and to gain sufficient reliable *data* for making an estimate of the time necessary for carrying out the complete despatch of a very large force.

Having carefully studied the facilities offered by the various lines, we have next to take into consideration the railway system of the country as a whole. It will then at once be evident that greater facilities for heavy military transport are offered in certain directions and with the choice of certain rayons of detrainment than in other directions with the choice of other rayons of detrainment. The rayon of concentration selected

* There are many other questions besides those of the line itself that should be taken into consideration as affecting the amount of military traffic a line is capable of. These are the position, size and arrangement of the stations, and, more than anything else, a numerous well-trained staff of officials and servants, and an ample amount of rolling-stock.

for an Army or Armies must then depend on the railway system of the country as well as on purely military or other considerations. Account must further be taken of the facilities for "through" traffic on lines made up of sections not having the same carrying powers. If it were merely a question of increasing *personnel* and *matériel*, the defects of any section could be soon remedied by reinforcements of railway officials, servants and rolling-stock from other lines more amply provided, so as to increase the efficiency of the defective section. The defective points are, however, often not of this description. They are often connected with difficulties of an engineering or technical nature as regards the laying out of the line and, consequently, are by no means easily remedied. A "through" line may often be seriously affected by a defective section of this description: These points must never be lost sight of in selecting through lines. Besides the latter, the so-called auxiliary lines, that is to say, lines leading to or connecting main lines, should have their facilities for traffic similarly considered. Thus it is at once evident that the railway system of a country, taken as a whole, can only be valued from a military point of view by taking each separate case of strategical concentration on the frontier independently, that is to say, investigating and examining the carrying powers of various lines of railway, once the frontier and rayon of concentration are known.

The facilities for the railway transport of large forces to a given rayon of concentration must depend then on the number of through and other lines that can be made use of leading directly to the rayon of concentration, and on the number of troop trains that can be daily run on such lines. Now if the total number of troop trains known to be necessary for the transport of a given force be divided by the number of trains that can be run each day on the line or lines by which this force is to be despatched to the frontier, we arrive at the most important consideration in the whole business, that is to say, the *time* required for massing the whole Army in a given rayon, reckoning from the arrival of the first troop train.

It is part of the duty of the General Staff to examine, in peace, the precise resources of the railway system of the country with a view to the concentration of the Army on the different frontiers, and carefully compare the results obtained in each case with the facilities for concentration possessed by the neighbouring country or countries.

Superiority in this respect is an important step in the conduct of a campaign. An army using an inferior railway system might even be forced, under certain circumstances, to fix its rayon of concentration at a considerable distance from the frontier, so as to avoid the danger of being attacked by the enemy whilst in process of concentration.

When any disadvantages of this description have been recognised *beforehand*, they may be remedied by the simple process of extending the railway system at the public expense. The efficiency of a railway system is much enhanced if all complicated through lines are placed each in the hands of a *single Direction*, and the various sections forming part of them laid out, maintained and managed on similar principles.

Without, however, being able to secure beforehand any such advantages, the German military authorities succeeded, on war being declared in 1870, in conveying to the western frontier in eleven days, up to the 4th August, on six North German through lines of railway, a combatant force of 356,000 men, 87,200 horses, 8,446 guns and carriages, and up to the 9th August, altogether, some 16,000 officers, 440,000 men, 135,000 horses, 14,000 guns and carriages, in 1,205 trains, running on 115,000 axles, in 15 stages (there were 13 on one line and only 5 on another).

We may reasonably assume then that in future our performances under this head will exceed this, in view of the great increase in railway construction.

The general arrangements for the conveyance of large bodies of troops by rail with a view to the concentration of an Army or Armies are made by the Chief of the Field Railway Service.

Owing to the dimensions which the network of railways covering the Empire has nowadays taken, the whole system cannot be supervised immediately and in detail by one central authority. The whole railway system of the country must consequently be sub-divided into several large "Military Managements" or "Districts," which, acting as intermediate agencies, can turn the resources of the different lines to the best account.

Fixing the boundaries or limits of these Managements or Districts—which should be drawn so as to divide carefully the lines which may be said to belong to one through route from those belonging to another—is of the very highest importance as regards the conveyance of large masses of troops by rail. The traffic in each of these Managements, the employment of *personnel* and *matériel*, and the arrangement of the working of main and branch lines, are matters under the immediate superintendence of a "Line Commandant," directly under the orders of the Chief of the Railway Service.

A permanent sub-division of the traffic into Managements cannot be made to suit equally the various cases that might occur as regards the concentration of the Army on the different frontiers. There are, it is true, in every case certain *data* to start from, which are identical, viz., the same network or system of railways covering the country, and, generally speaking, the points *from* which the movements would begin (garrisons, or places of assembly of the troops). But, on the other hand, the points *on* which the movements would be directed must vary, of course, in each case. Again, the arrangements which should be made in peace, especially as regards the question of defining the military traffic managements, would certainly be influenced by the stability or weakness of our political relations with our neighbours.

It may therefore be said to be impossible to organise these military Railway Managements in peace so that the arrangement may be the best possible for every case that might occur on the declaration of war. It should be made to meet the require-

ments of the case which is most likely to occur, but should be capable of being adapted to other requirements, so that it may be given a more permanent character than that of the considerations upon which it is based.

In the question of military railway transport—in which every precaution against accident cannot be too strongly insisted on—it is more than ever necessary to secure a well-trained *personnel*. This must be carefully borne in mind in selecting the main through routes. The distribution of the railway lines follows exactly the existing railway administrative districts, so that a Railway Commissioner (in war a Line Commandant) administers one or two railway districts with, it may be, some lines not under Government management.

It has been already stated that the resources of different lines of railway vary considerably. Now we find that there is a tendency, from commercial and other considerations, in peace to establish through main routes of communication of greatest and most uniform capacity possible. These lines are worked on a uniform system of traffic management, and we must consequently look upon them as the main through routes best suited to heavy military transport. The more there are of these separate and independent through routes that can be made use of in the particular case, the better. If different through lines meet, cross or merge into one another, there is always the danger of a block in the traffic which not only affects the working of *one* line, but perhaps very seriously interferes with that of *other* lines.

In certain circumstances, however, it may be found almost impossible to define the limits of each Military Management or District so that the working of one through line does not interfere with or obstruct that of another. When this occurs the arrangements necessary to avoid difficulties are made by the central authority, *i.e.*, the Chief of the Field Railway Service.

The latter, on receiving the necessary information as regards the concentration of the forces of the Empire from the Chief of the General Staff of the Army, has to draw up a set of "General

"Transport Directions" based on the following points :—Distribution of the Field Army and of the Garrison Troops; instructions of the Chief of the General Staff of the Army on the rayons of concentration of Armies and Army Corps; points of detrainment in accordance with these; lines of march; places of assembly of "Communications" formations; "stations of assembly"; "transfer stations"; bases of the Lines of Communication of each Army Corps (*Etappen-Anfangsorte*)* Time Tables and the designation of the different lines of railway; Time Tables for forwarding reinforcements in men and horses; and, finally, Time Tables for the mobilisation of Army Corps.

In the concentration of an Army by railway certain classes of troop trains must be given precedence in order to secure the safe transit of those which follow—for instance, trains conveying combatants precede those containing supply columns, as the latter are only wanted when the concentration is practically completed and the Army is about to begin active operations. Thus, when the Army is being massed on the frontier by road and rail, the forces that are being conveyed by the latter should be despatched in trains arranged with regard to the composition of the different parts of the Army, and also to getting the whole army in a state of readiness with the least possible delay.

Some idea may now be formed of the numerous requirements which the central authority has to meet. In the first place, sufficient information and *data* for the ultimate *division of transport* among the different Managements and among the through routes must be furnished. The detail that has next to be worked out, which appears in the form of "Railway and March Time Tables" for the immediate use of the troops, is left to the "Line Commandants," though the preliminary work connected with it is undertaken by the Railway Section of the Great General Staff, thus affording the latter the opportunity for practice in the subject.

* For further information on these places and stations connected with the "Communications of an Army in the Field," see Chapter VIII.

The detail that has to be worked out in the case of each Management or main through route may be classed under the following heads :—

1. The units to be forwarded by the line in question.
2. The garrisons or places of entrainment of the above.
3. The places of detrainment.
4. The requirement in axles.
5. The maximum amount of traffic the different sections of the line in question can furnish.

1. Unless special instructions are given ordering certain troops to be sent on in front, the first thing to be done is to fix the order in which the units and special formations are to be forwarded. On this point the following may be laid down as general rules :—The combatant troops of any force should precede the supply, ammunition and other columns belonging to it; and, again, in an Army Corps the Division, and in a Division the Brigade, which can first be assembled complete is the first to be forwarded. Divisional Cavalry should accompany or immediately follow the leading Infantry. Part of the Divisional Artillery should be with the leading Infantry Brigade, or at any rate in the centre of the Infantry. Engineers should be despatched as soon as possible (work may have to be done at detraining stations); and bearer companies with the Divisional Staff, or at the tail of the Infantry (in the latter case with some field hospitals). The Staff of one Infantry Brigade should be forwarded with the leading Battalion of the Division; that of the other, after the Divisional Staff. The latter should be with the leading Brigade. The Army Corps Staff, with the heads of the administrative services, should either accompany or immediately follow the leading Division.

As regards supply and other columns, the general rule of precedence would be :—The field bakery column should be forwarded as soon as possible; the first *echelon* of the train and a detachment of the ammunition columns with the rear units of, or immediately following, the second Division. Next would follow

the second *echelon* of the train, the field hospitals, the second detachment of ammunition columns, the Corps Bridge Train, and the Remount Dépôt.

These rules should, however, be departed from when by strictly following them there would be a train or a portion of an available train left unoccupied in consequence, or when entrainments or detrainments would follow too rapidly at inconvenient stations, or when it would be possible by making slight alterations to maintain the regularity of traffic on the several sections of the line by arranging that daily or during fixed periods certain trains only shall run on one section and others on other sections.

Trains laden with supplies should be included in the amount of railway transport required for each Army Corps, the provisions thus forwarded being intended to assist in supplying the Army Corps in the rayon of concentration. A train laden with supplies can furnish subsistence for an Army Corps and half a Cavalry Division for two days. Finally, each troop train is given a number.

2 and 3. Entraining and detraining troops, and especially unloading trains conveying baggage or supplies, are operations, it should be remembered, requiring no inconsiderable amount of time. In some cases, where local arrangements are ill adapted for the purpose, the difficulties may be so great as to cause the railway station in question to be practically excluded, or at any rate only considered as available at long intervals of time.

Even with the very best arrangements more trains can be run daily on one through route than can be possibly loaded or unloaded at any single station. As regards entrainment, the peace distribution of the Army in garrisons enables the operation to be carried out simultaneously at several stations. Detrainment, on the other hand, takes place, as a rule, in a contracted area, and it is desirable to have as many points of detrainment within this space as will allow each train arriving in succession several hours for unloading. This is considerably more than is absolutely

necessary for the purpose, but allowances must be made for checks and delays in the traffic.

4. As regards the length of a troop train, it may be laid down that, if possible, it should not exceed 110 axles, in no case be greater than 120 axles, and as a rule be 100 axles, or somewhat less.

Taking 10 officers or officials, or 16 men, or 3 horses and 1 man, or $\frac{1}{2}$ a gun (with limber) or four-wheeled carriage, or $\frac{1}{3}$ a pontoon wagon, per axle, the requirement in axles of every unit can be calculated, and from this the arrangement and composition of the trains, so as to avoid as much as possible the breaking up of units.

The approximate load of each carriage will therefore be—

- 24 officers ; or
- 36 rank and file ; or
- 6 horses and 2 men ; or
- 4 draft horses and 2 men ; or
- 1 gun or vehicle.

An Infantry Division (13 battalions, 3 squadrons, 12 batteries) therefore requires 34 trains ; a Cavalry Division (24 squadrons, 2 batteries), 28 trains ; an Army Corps (25 battalions, 6 squadrons, 24 batteries), 68 trains ; the first *échelon* of the supply and ammunition columns, 21 trains ; the second *échelon*, 23 trains ; the whole Army Corps, including five or six supply trains, requires 117 or 118 trains.

The time of despatch is—

<i>Single Line.</i>		<i>Double Line.</i>
	For an Infantry Division.	
3 days.		1½ days.
	For a Cavalry Division.	
2½ days.		1 day.
	For an Army Corps.	
7 days.		3 days.
	For the Supply and Ammunition Columns.	
3½ days.		1½ days.
	For the five or six Supply Trains.	
½ day.		¼ day.
	Total for an Army Corps.	
11 days.		4½ days.

It may be seen from this that to move troops by rail is only advantageous when it takes longer to march by road. An Army Corps covers about 72 miles in five days; the journey by rail on a single line takes seven days; it is only when the line is double that there is any advantage in moving an Army Corps by rail, it then takes only three days.

5. The amount of traffic of which a given section of railway is capable is expressed by the number of trains which can be despatched in 24 hours. This must be ascertained in each case. The general plan of the despatch of troop trains contains the necessary information for this.

A railway and march Time Table will be drawn up for each Army Corps and independent Division, in accordance with these considerations. This shows, in addition to the general detail of the journey, the marches to the place of entraining, the time of departure of each unit, the time of arrival at the various stations, with the names of those at which food is provided for the troops, the day and hour of arrival at the place of detraining, and the marches to the place of concentration. All orders which concern the railway management and the feeding of the troops are issued by the railway staff. The troops are required to implicitly follow their instructions.

3. STEAMBOATS.

In the matter of the transport of troops by steamboats, the only questions to be examined are the accommodation of the vessels themselves and facilities for embarkation and disembarkation. The actual line itself, which plays such an important part in railway transport, is here represented by the sea, lakes, rivers or canals. Rivers and canals are rarely sufficiently navigable for the purpose, and their use must thus be limited. Again, the transport available on rivers (that is to say, the steamers themselves) is of a very limited description compared to that of railways. Then, again, there is an absence of good water communication between rivers, so that the use of water transport for

the concentration of large forces can only be looked upon as of secondary importance.

On the other hand, waterways may be used to supplement railways, particularly in supplying an Army with food, ammunition and *matériel*, and in moving sick and wounded. See Chap. VIII, B. (See Part II, Chap. X, *re* the transport of troops by sea to carry out landings.)

B. MARCHES IN THE PRESENCE OF THE ENEMY.

When troops are marching *in the presence of the enemy*, that is to say, when there is any possibility of their meeting with the enemy on the march, their readiness for action takes precedence of all other considerations.

The hour at which a body of troops is to reach its objective is often fixed. This makes it necessary for some units of a large force to start sometimes at inconvenient hours. The objective may be the enemy, and not only is his position in many cases imperfectly known, having to be sought for on the march, but he may be himself on the move. Another great difficulty to be dealt with in issuing orders is the small number of roads available, for, with the size of modern Armies, when two opposing forces are in presence of each other and have established close contact between their advanced posts, huge masses of troops have to march in a contracted space, and, necessarily, on few roads. When troops become massed, indeed, in a given space, beyond a certain point, actual *marching*, *i.e.*, the regular movement of troops for an average day's march on roads of the country, becomes impossible. Forces under such circumstances can only be *moved*, *i.e.*, change positions, by moving to a certain extent across country, in formations most inconvenient for marching, and consequently only practicable for short distances. The great thing then is to be concentrated at the right time (for fighting), and separated at the right time (for marching, quarters and subsistence). In the judicious application of these two

well-known principles lies the main secret of the skilful manœuvring of large Armies.

Marching is by far the commonest incident in the field, and all arrangements for marches are in the hands of the General Staff. But, in spite of the apparently complicated nature of this duty, and the necessity for duly weighing conflicting interests (such as, for instance, readiness for action and the comfort of the troops), the thing is in itself tolerably simple if the relations between time and space, as well as the tactical and strategical considerations of the moment, are never lost sight of.

As regards the latter, in certain cases—as, for instance, in a pursuit, or to anticipate the enemy at a point of strategical importance (such as a railway or road junction, a mountain defile or a bridge)—it may be necessary to call for the greatest exertions on the part of the troops for a few days. In other cases the troops may, and therefore should be spared.

The strategical and tactical situation affects chiefly the extent to which columns on the march must be ready for action and the precautions that have to be taken against surprise; it may also make it necessary to use roads which are otherwise undesirable. Again, the formation of advanced guards, the order and composition of the columns of route, the hour of marching off are questions affected by tactical considerations, to an extent which often involves considerable hardship on the troops. Even night marches may be unavoidable under certain circumstances.

It may sometimes happen that in war, and even within the theatre of active operations, there may be no reason why certain forces should not march with very little more than the ordinary precautions and arrangements observed in peace. One rule must be observed, however, and that is—under no circumstances whatever should Artillery be allowed to march for any distance separated from the other arms.

The relations between time and space require the most careful consideration. The length occupied by a force in column of

route on a road must be known, as well as the time it takes to get over a certain distance. Defiles that have to be passed must be carefully considered.

Errors of judgment or omissions in the application of these principles are sure to be followed by the most serious consequences; for, apart from the risk of accidents, troops are generally harassed, without any reasonable excuse, by unnecessarily early starts, constant and wearisome halts on the march, and such-like occurrences.

The mistake that is usually made, and which directly brings about such results, is the massing of too large a force at the same place, whence it must march off by one road—the desire being to keep the troops well together and to complete the day's march at an early hour.

It often happens that circumstances do not allow the military situation to be sufficiently clearly grasped to enable the best arrangements to be made when issuing orders. Again, the character of the roads, especially in an advance, is often imperfectly known, though with the aid of good maps and by taking the state of the weather into account this can usually be conjectured. The weather is, however, always liable to change and cannot be known with any degree of certainty beforehand.

Errors are consequently not only possible, but often unavoidable. But to issue instructions which should have been known beforehand to be impracticable or impossible to comply with is an unpardonable blunder. Mistakes of this kind can generally be traced to an imperfect knowledge of the lengths of the various columns and their rates of marching.

The want of discipline, or the faulty marching powers of the troops, on the other hand, will often frustrate the very best arrangements,

1. COMPOSITION AND STRENGTH OF COLUMNS.

The composition and strength of the various columns of route depend first of all on the total strength of the force that is marching and the number and quality of the roads available.

A force should always march on as broad a front as the military situation may justify. Supposing then that an engagement is possible on the march, the degree of its probability decides how far this rule should be made to apply in each case.

The necessity for dividing a large force is, however, inevitable if the maximum length of a column of route for a day's march be considered. Thus when this maximum is exceeded for any given road, the force in question must be divided, either as regards its length into *échelons* of a day's march each, or as regards its breadth into parallel columns. The latter expedient is often necessary as a precaution against surprise, and is frequently very desirable from a tactical point of view, as enabling an outflanking attack to be made on the enemy.

If a *large* force were marching on a *single* road, the troops at the tail of the column would come up in line much later than if the force were divided and marching by several roads, and in the former case the force would be in reality less concentrated for battle, notwithstanding that the troops were following in one continuous column, than in the latter. A judicious division, therefore, into columns has the great advantage of enabling troops to be deployed into line of battle more rapidly, and at the same time more easily housed and fed.

Though as regards the two latter points it is not very easy to lay down any precise rules as to how far troops may be scattered, there is one broad principle that should never be lost sight of, and that is—the division of a force into lateral columns is disadvantageous as regards deployment into line of battle if the distances between the different heads of columns are together much greater than the total depth of the whole force if it were marching in *one* column.

For instance, a Division requires a front of about 3 kilometres (1½ miles) to deploy fully into line of battle.

Now supposing the Division to be advancing in alignment by two roads some 3 kilometres apart, it would take just half the time to deploy on the leading troops of both columns that it would take if it were advancing by one road. This advantage diminishes as the lateral distance between the columns increases, and disappears when it greatly exceeds half the depth of the whole division in column of route. For if one of the columns had to converge on the head of the other to deploy into line of battle, it would have to execute more or less of a flank march—an evil in itself—occupying, in all probability, very nearly as much time as would be taken to deploy from behind were both advancing by the same road. Besides, the General commanding the Division can only immediately command one column.

There may, however, be advantages of another nature to be gained by an advance in several columns, and such a proceeding may not only sometimes appear justifiable, but even very desirable, especially in cases where a force has to pass through defiles or debouch from mountains.

The question is more serious when the distance between the heads of columns is still further increased, or the force is divided into many columns moving far apart. The danger of these columns being attacked and crushed singly by superior forces of the enemy before they could be supported is all the more to be feared in this case, as no efficient and active unity of command, which alone can prevent such catastrophes happening, is possible with very scattered forces, and perhaps no single column could, unless favoured to an extraordinary degree by the ground, be expected to hold out by itself until supported. The advantage of marching in separate columns has its limitations, especially when the country lying between the roads used by the different columns is of an inaccurate or impassable character.

The above considerations may be said only to apply literally to marches in advance or retreat. They apply nevertheless to flank marches as well.

The first consideration in every case is the length of a column of route for *one* day's march on *one* road. This mainly rests on the depths in column of route of the various units forming the force, and on their rate of marching, or rather on the mean daily rate of marching of the whole column. Taking the latter as averaging 22 kilometres ($13\frac{1}{2}$ miles), the point to be determined is the strength of the force that occupies 22 kilometres of road in ordinary column of route.

Any officer who is responsible for assigning, within the time required to complete this distance, additional troops to the particular section of any given road required for the movement of this column, without taking steps to reduce the length of the column by marching on a broader front, or some such measure, is guilty of a military blunder.

a. Depth of Columns.

In drawing up orders for the march of large bodies of troops, the officer of the General Staff must invariably be able to estimate roughly on the spot the depth of column of route of any body of troops. He must consequently always have at his fingers' ends in round numbers the various depths of the units composing a force on the march, as well as the depths occupied by the 2nd Line Transport. The figures representing these, however, must be regarded as liable to extension, for the depth of columns is, especially in war, a very variable quantity.

In the immediate presence of the enemy the breadth of the road will, as a rule, be turned to account to the utmost possible extent. The depth of the column will therefore depend directly on the width of road available, bearing in mind that room must be left on one side for the passage of officers and orderlies.

The state or character of a road may, however, have even more to say to the question than its actual breadth. A road may indeed be broad, but yet be in such a state as only to enable foot soldiers and riders to move on it in file on either side, and guns and carriages to get along by picking out the best places one at a time.

Again, the state of the weather, especially great heat and dust, the length of the day's march, or the tired state of the troops, may tend to cause the columns to tail out even when the troops are in the highest state of military order and discipline.

Finally, the effective strength of units at the time must be borne in mind.

The following may be taken in round numbers as the depths occupied on the line of march by men, horses, guns and vehicles on a war footing, and by which the total depths of columns can be estimated; the Infantry being in fours, the Cavalry in sections, vehicles in single file:—

	<i>Units.</i>	<i>Yards.</i>
Battalion	430
Machine gun detachment	215
Cavalry Regiment (four squadrons)	575
" " (three ")	430
Field battery (with its wagons)	290
Horse " " "	375
Heavy field howitzer battery	430
Mortar battery	535
10-centimetre gun battery	520
Light ammunition column	430
" " " of Cavalry Divisions	320
Heavy Artillery ammunition column	340
Field company of Engineers	180
Divisional bridge train	320
Corps " " "	860
Telegraph detachment	340 to 405
Balloon " " "	430
Gas column of balloon detachment	215
Infantry and Field Artillery ammunition column	640 to 700
Transport column	750
Supply " " "	495
Field bakery	430
Remount dépôt	210
Bearer company	270
Field hospital	165

Thus it appears that an Infantry Division occupies in its ordinary order of march and under exceptionally favourable circumstances a depth in column of route, without its 2nd Line Transport, of 10 kilometres (6 miles). To this should be added the distance to which the advanced guard and its component parts are pushed forward. This may be taken as from 2 to 3 kilometres, so that the total depth occupied by a Division marching on one road in the presence of the enemy may be put down as from 12 to 13 kilometres ($7\frac{1}{2}$ to $8\frac{1}{2}$ miles), reckoned from the leading troops of the advanced guard to the rear of the main body.

A Cavalry Division occupies, without reckoning any advanced guard, a depth of $4\frac{1}{2}$ kilometres (3 miles).

The total combatants of an Army Corps occupy a depth in column of route of 25 kilometres ($15\frac{1}{2}$ miles).

Ammunition columns and trains occupy, exclusive of intervals between *échelons*, a depth of 20 kilometres ($12\frac{1}{2}$ miles).

The depth occupied by the 2nd Line Transport may be calculated from the following :—

	Yards.
For a battalion	110
„ machine-gun detachment.. .. .	46
„ Cavalry Regiment (four squadrons)	215
„ „ „ (three „)	195
„ battery	55
„ heavy field howitzer battery	65
„ mortar battery	65
„ 10-centimetre gun battery	65
„ light ammunition column	54
„ „ „ of a Cavalry Division	54
„ field company of Engineers	22
„ divisional bridge train	12
„ telegraph detachment	12
„ balloon	54
„ gas column of balloon detachment	54
„ bearer company	12

In reckoning the depth occupied by the second line transport of a strong column, the total obtained by adding together the depths of the various units as given above must be liberally rounded off, to allow for the second line transport of the Staff which is not included.

The second line transport of an Infantry Division occupies a depth of 3 kilometres (2 miles), that of a Cavalry Division 1·6 kilometres (1 mile), and that of an Army Corps 7 kilometres (4½ miles).

If it were necessary to march on a smaller front, that is to say, Infantry in files and Cavalry in half-sections, the depths given above would be increased by at least 50 to 100 per cent.

If it were possible, on the other hand, to march on a broader front, the depths would be diminished as follows :—

Infantry in sections of 6 files by about 25 per cent.
 „ „ 8 „ 40 „

In the case of a column of all arms :—

On a front of half *zug**—

Infantry in column of half *zugs*, Cavalry in squadron column and Artillery in column of sections, vehicles in pairs—by about 55 per cent

On a front of a section (*zug*)—

Infantry in column of *zugs*, Cavalry in half squadrons, Artillery in column of batteries at close interval, vehicles, &c., in fours (front of 44 yards)—by about 70 to 75 per cent.

A pontoon bridge is crossed by Infantry breaking step, by Cavalry dismounted and by Artillery by single guns and ammunition wagons with intervals of 9 yards. Battalions maintain intervals of from 30 to 45 yards between each other, squadrons and batteries 9 yards, and Cavalry Regiments from 30 to 45 yards. These intervals may be increased at the discretion of the Engineer officer acting as Bridge Commandant. Thus the depth in column of route of a large force passing a pontoon bridge may be taken as increased by at least 50 per cent.

This temporary increase in the depth of the column results in a loss of time to the head of the column if it halts in order that the broader front may be resumed and the tail close up, to continue the march in the normal depth. But if the head of the column marches on without waiting, and no attention is paid to the increased depths in the formation of the troops, the tail of the column is late in arriving at its destination, in

* The *zug* is ½rd of the German Company. (Tr.)

proportion to the extent to which the total depth of the column has been lengthened.

b. Rate of Marching.

Next to the length of columns, the rate of marching has most effect upon a march. It varies, of course, with the different arms. The rate of marching in the case of Infantry depends upon the total length of march (for halts and gradually increasing weariness have to be taken into consideration), also on the weather, the season, and finally on the state of the road. The Artillery and the transport are particularly affected if the road is in bad condition or has steep gradients. Ice, sandy or stony roads and steep gradients particularly affect the rate of marching of Cavalry. But if there are no specially unfavourable circumstances, Cavalry and Artillery will always move faster than Infantry. It is, therefore, the rule to regulate the rate of marching of mixed columns by the rate of marching of the Infantry. Experience shows that the following will be the usual rates of marching:—

An Infantry Battalion marching on a good road with the weather favourable covers a kilometre in 10 minutes, and therefore 10 kilometres (6 miles) in 100 minutes. If the march is longer than this, allowances must be made for longer halts, for the men becoming tired, and for delays. The $22\frac{1}{2}$ kilometres (14 miles) which, as has been previously pointed out, is the average length of a day's march, therefore takes about six hours.

The pace of Cavalry and Artillery at a walk is rather quicker than that of Infantry, the proportion being about 6 to 5; both these arms have therefore to check their pace when marching with Infantry; they can usually do this by means of short halts, and by making use of the distances which are always left between units in column of route. Troops move considerably slower when the thermometer is above 70° or 80°; every 10 kilometres (6 miles) should then be calculated as taking from 25 to 30 minutes longer. This loss of time increases when the heat is greater (50°), and owing to the frequent halts necessary, it may take

from one to two hours longer to march 10 kilometres. Severe cold only affects mounted arms on the march, and does not interfere with their rate of marching unless the roads have been cut up before the frost and the ruts are frozen hard, or unless the roads are slippery. Cold weather will, as a rule, considerably increase the rate of marching of all arms, because then the halts are shorter. Sandy or greasy roads and deep snow delay the rate of marching of Infantry and Artillery from 20 to 30 minutes every 10 kilometres. A strong head wind delays them from 40 to 60 minutes, heavy rain or snow from 15 to 20 minutes in the same distance. In mountainous country, except in the case of a road running along a valley with gentle gradients, an allowance of from 30 to 60 minutes for every 10 kilometres should be made, because of the difficulty of measuring correctly on the map all the bends in the road, and because of the gradients. The time which is required for a march and the length of the column determine the hour of starting. In deciding on this, care must be taken to see that the last units in the column do not reach their destinations too late, *i.e.*, not much after mid-day. A very early start undesirably curtails the night's rest; in winter when the days are short it will often not be possible to march before 8 A.M. The mounted arms have to begin their preparations for the march two hours before starting, Infantry about one hour.

Experience shows that there are certain limits to the strength of man and horse which cannot be exceeded for long. Any increase in the marching powers of large bodies of troops depends therefore chiefly upon the arrangements made for the march. An Army which falls below the standard of other Armies in this respect throws away one of the most important weapons for the conduct of war, and one which increases in importance with the size of modern Armies. Only the most complete knowledge and mastery of all the attendant circumstances assures the timely concentration on the battlefield of the large bodies of troops which have to be kept separate during the march, and makes the exceptional marches which may be required in certain circumstances

possible. Such marches require the greatest efforts on the part of all concerned, and all Staff officers must be careful to spare troops in every possible way by means of efficient arrangements during the ordinary marches which precede these exceptional efforts. Necessary and unavoidable exertions already cause a greater reduction in the strength of units than is desirable, next, in fact, to actual losses in battle; so that any unnecessary expenditure of force, which almost invariably entails losses, must be absolutely avoided.

The following have been found to be the times taken to perform a 22½-kilometre (14 miles) march :—

	On a good road and under favourable circumstances.	On a bad road and under favourable circumstances.	On a bad road and under unfavourable circumstances.	Under very unfavourable circumstances.
	Hours. 5	Hours. 8	Hours. 10	Hours. 12
A battalion of infantry or field battery ...				
A regiment of cavalry or battery of horse artillery	4	6	7½	9
A supply column, etc.		10	16	20
An Infantry Division	6	9	11	14
A Cavalry Division	4	7	9	12
Add for every additional Infantry Division on the same road	1	2	3	4

The above figures represent the time taken by the heads of columns of route only. If the column, after the head has reached its destination or alignment, has to be formed up or deployed either for action or to bivouac, to the times as given above must be added, in the case of any of the rear portions, the length of the column preceding it on the road—expressed in time. Thus, for instance, in the case of the tail of the column, the total time would be that taken by the head *plus* the time taken to march a distance equal to the length of the whole column.

An Army Corps, then, composed of 25 battalions, 6 squadrons and 24 batteries, occupying some 15 miles of road, without taking into account the second line transport, which would be left in rear,

would, when advancing by one road, require from 12 to 20 hours, according to circumstances, to march a distance of $22\frac{1}{2}$ kilometres (14 miles) and deploy into line of battle. This, then, at once gives us the *maximum* force that should be moved by *one* road (the troops being at full war strength) if it is at once to engage the enemy, or to be drawn up in position ready for battle.

If, however, it is merely a question of an advance, and the component parts of the force remain *écheloned* along the road at the end of the day's march, at intervals corresponding to their respective depths in column of route, ready to continue the march on the following day, the total length of the whole force in column of route is no longer of the same importance. This, however, at once ceases to be the case when, for any reason, the tail of the column has to deploy into alignment with the head, or other bodies of troops have to be temporarily inserted in the column or join it—as, for instance, would occur if several columns marching separately by different roads had all to pass a certain defile which could not be turned.

In a case of this description, the times taken by the different columns to clear the defile from end to end must be calculated from their respective lengths and rates of marching. Hence the proper time for the arrival of the head of each column at the defile can be deduced, and an estimate can then be formed of the maximum number of troops that can pass the defile in the course of a day.

c. Order of March of Combatants.

By *Order of March* is here meant the order in which the troops follow each other in column of route and the distances maintained between the various bodies on the march.

In this, as in other questions of a tactical nature, it is impossible to give any hard-and-fast rules, as the peculiar circumstances of each case require different arrangements. Certain general principles, can, however, be laid down, any deviation from which would be rarely justifiable.

When a force is marching in the presence of the enemy, and there is any chance of the latter being encountered, precautions must necessarily be taken to prevent surprise. This is done by pushing forward advanced guards and sending out flanking detachments; in fact, by detaching small forces from the main body. These, inasmuch as they are more ready for action and further protect themselves by again pushing forward small parties, enable the main body to gain time if suddenly attacked. But by far the safest plan is to *find* the enemy, never lose "touch" of his forces once obtained, to rapidly report all his movements, and to draw a screen, so to speak, round one's own. Cavalry alone can do this, and must therefore be thrown out in advance and on both flanks. In the German Service this is done on a large scale by the judicious employment of the greater part of the Cavalry, that is to say, the Cavalry Divisions.

The order of march of a Cavalry Division depends upon the extent of front the latter has to occupy. A reconnaissance cannot always be carried out by patrols. Reconnoitring requires a variety of measures, from the use of patrols whose movements are concealed from the enemy's observation, up to the employment of the whole Cavalry Division. As reconnaissance is the chief duty of the Cavalry Division, its main body must be kept in hand, so that it can tear apart by force the veil formed by the enemy's Cavalry.

The Cavalry screen requires a distribution of force along the whole front of the Armies which have to be covered. This frequently necessitates the Cavalry Division being split up, and thereby weakens its fighting strength.

It is very difficult to carry out *two duties simultaneously* which are so apparently incompatible; for while the essence of reconnaissance is to push forward, and not to be tied down by the movements of the main Army in rear, screening duties generally necessitate slow advance and constant halting in front of the force to be screened. Of course the latter duties may in certain circumstances be best carried out by attacking the enemy.

It is impossible to lay down hard-and-fast rules for the advance of a Cavalry Division. After 1870 the most suitable formation was considered to be in two Brigades, the Artillery in the first line, and one of the Heavy Brigades in the second line, but all three Brigades may be required to advance in line, or one behind the other. There does not seem to be any point in discussing which of these three formations is most suitable, when it is remembered that the composition of a Cavalry Division will not be constant throughout the course of a campaign, but may be frequently altered to suit the duties it has to carry out, or because of detachments which it may be necessary to make. The situation at the moment, the nature of the country, the number of the roads, the weather, all affect the formation of a Cavalry Division. The latter cannot march on a broad front in the immediate vicinity of a strong force of hostile Cavalry, for the information about the enemy's movements would come in too late to allow of the Division being concentrated before the enemy was met. The Cavalry combat is over too quickly to allow of brigades marching on different roads to be always concentrated at the right time and place, even when the lateral communications are very favourable. There are great disadvantages in allowing the Cavalry Division to fall back to concentrate: it must usually, therefore, be kept concentrated in a single column when close to the enemy: it can be deployed for battle in from 12 to 20 minutes. The further it is from the enemy the more the Cavalry Division can be spread out to save horses and to obtain better quarters and supplies. The Cavalry Division can usually be spread out over a front of 30 kilometres (18 miles) and a depth of 15 kilometres (9 miles), without taking into consideration the front occupied for reconnoitring purposes, and still be concentrated to either flank in one day.

When the Cavalry Division marches in one column, the Commander of the Division orders the measures necessary for security, which depend for their effectiveness chiefly on the distance to which the various detachments are pushed forward. In order to gain time to reconnoitre the enemy, and the country, the troops

charged with the protection of the march must move forward at a rapid pace; this must also be done in flank marches and in retreats. The guns and the machine-gun detachments must be kept concentrated. In a pursuit they will always form part of the advance guard, in a retreat they will frequently be attached to the rear guard.

When the Cavalry Division is marching in several columns, the objectives of the Brigades are settled by the Divisional Commander, who regulates the relations between the various columns. All further instructions are issued by the Brigadiers. The position of the Divisional Commander, the allotment of the Artillery, or machine-gun detachments, to one or several of the columns depend upon the circumstances of the case. If one of the larger Infantry units is temporarily attached to a Cavalry Division it will always march at the end of the whole column. If several Cavalry Divisions are placed under the command of one Cavalry General, they will always march by several parallel roads whenever the number of roads admits of it. The length of two or more Cavalry Divisions in column of route on a single road has a very disturbing effect upon their marching, and does not increase the rapidity with which they can be deployed for battle. The General in command must therefore allot the various duties to the Divisions, fix the roads by which they are to move, and issue all orders required to insure the permanent co-operation of the Divisions, without limiting their initiative more than is necessary.

Since the Cavalry Divisions are often pushed forward several days' march in front of the main Army, they cannot assure the security of the troops behind them. This duty therefore falls to the Infantry Division which is nearest to the enemy, even when a Cavalry Division is in front of it. The greater part of the Divisional Cavalry is often placed under a Commander appointed for the purpose and attached to this Division. The order of march of the detachments composing the advanced, or flank, guard, is fixed by their Commanders.

The remaining troops of the Division (with the exception of any detachments that might be necessary as escorts for the 2nd

Line Transport) form the main body. This is not, as a rule, placed under the orders of any specially detailed officer. The General Commanding the Division gives the order of march of the main body, and the distance to be observed from the advanced guard. This interval is intended to give the main body time to deploy for action without a check, should the advanced guard be attacked and forced to retire.

The order of march must suit the order in which it appears desirable the troops should deploy into line of battle from column of route.

Artillery, as the arm which begins an action, and which requires time to produce an effect, should therefore be, as a rule, *as far forward as possible* in the column of route. Artillery, however, from its very nature cannot actually form the head of a column, though, as in the case of Cavalry, such a position best suits it for marching only.

Heavy Artillery generally march in rear of the fighting troops, because the length of road it occupies in column of route makes it undesirable to include it in the columns, and because it is usually only employed during the course of a battle. If it is likely to be required at the beginning of a battle, the wagons necessary for observation purposes should be sent forward to the advanced guard, and the heavy batteries pushed on to the rear of the Field Artillery. Their ammunition wagons follow immediately behind them. The mobility of the heavy field howitzers is about the same as that of Field Artillery when the country is favourable, at other times it is about that of Infantry. The 10-centimetre guns and mortar batteries sometimes require the assistance of Infantry on the line of march. Weak bridges must be strengthened in time by the Engineers.

At first sight it would appear desirable that the interval between advanced guard and main body should be equal to the depth in column of route of the latter. This, however, is an arrangement of too mechanical a nature, and assumes that the advanced guard will be taken by surprise—a circumstance which should not occur if the leading Cavalry were pushed

sufficiently far to the front. A shorter interval would seem to meet the case best, and this has the advantage of enabling the advanced guard to be more rapidly supported.

If an Army Corps is advancing on a single road, the leading Division undertakes the measures necessary for security automatically. The General commanding the Army Corps may occasionally order the two regiments of Divisional Cavalry to be concentrated for a particular purpose. Care must be taken when this is done that the Divisional Cavalry return to their Divisions when they have carried out the duty.

The second of the two Divisions must adopt an order of march suitable for its deployment for battle, usually on the flank of the leading Division.

If the Army Corps were advancing by two roads, one would, as a rule, be assigned to each Division. The Divisional Generals would draw up the order of march of their respective Divisions, forming each an advanced guard; as in the case of the advance of an Army Corps in separate columns, a single advanced guard would rarely be practicable.

The principles by which the strength and composition of advanced guards are to be regulated are laid down in F.S. Regns., para. 147. The Regulations do not prescribe any definite model, but certain points are laid down for guidance. The questions whether the advanced guard should be strong or weak, whether it should have Artillery with it or not, whether the Cavalry attached to the advanced guard should be under the orders of the Commander of the latter or not, must be decided in accordance with the instruction that the strength and composition of advanced, rear, and flank guards must be regulated in each case according to the situation and the particular duty to be performed; that is to say, they may vary to an almost unlimited extent. But since an advanced guard in war is usually formed for more than one day, and for more than one purpose, and for the reasons given above must usually be organised for several days, and be prepared for duties which cannot be foreseen, these questions obtain an importance which seems to justify a thorough investigation.

Besides having to reconnoitre and to ensure the safety of the main body, an advanced guard has to prepare the way for and lead up to the carrying out of the intentions of the Commander of the force, without committing him to a course of action of which he would not approve.

A strong advanced guard is in a position to drive back the enemy's advanced troops, to compel the enemy to deploy in considerable strength and thereby to obtain information as to the enemy's position. It can also seize positions which may be of importance to the attack, oppose any hostile advance, and enable the main body to push steadily forward and deploy for battle without undue haste. A strong advanced guard therefore assures freedom of action to a Commander, and allows him to develop his main strength where it will be most effective.

When an advanced guard is comparatively strong and independent, there is a danger that its Commander may be led into action which is not in accordance with the intentions of his General. This danger is, however, not altogether obviated when the advanced guard is weak, and may then have much more serious consequences. The only way of getting over this difficulty, without destroying the initiative of an advanced guard by issuing definite orders, is to educate the advanced guard Commanders in peace to understand the larger operations of war. The surest means of preventing premature action on the part of an advanced guard is for the General in command himself to ride forward and be prepared to issue instructions on important points. A weak advanced guard will be formed, when the enemy is still distant, to act as a support to the reconnoitring Cavalry, and also to protect the Artillery when it is pushed forward to prepare the attack, after the enemy is discovered to occupy a strong position. In either case a comparatively small force of Infantry will be required. A weak advanced guard is specially exposed to the danger of being overwhelmed by an enterprising enemy before the main body can interfere.

In accordance with the above considerations, a strong advanced guard will generally be able to move at some distance from

the main body, while the distance between the latter and a weak advanced guard must be considerably less.

A strong advanced guard would be composed of the three arms, with a proportion of technical troops. But measures of security on this scale will only be taken by independent Divisions or Army Corps, for these alone have full freedom of action in seeking out the weakest points of the enemy in an attack, *i.e.*, they alone are free to make wide flanking movements under cover of a strong advanced guard.

When several Infantry Divisions or Army Corps are advancing to battle as parts of an Army on parallel roads in close touch, then none of these units, with the possible exception of those on the wings, is free to move far to a flank on its own initiative. In such a case it is usually a question of a rapid deployment to the front, and this would only be delayed by the distances taken up by a strong advanced guard; therefore, the advanced guards pushed forward would be weak, the more so as they would mutually support each other. An advanced guard consisting of one battalion, moving about 1,000 yards in front of each Army Corps, is usually sufficient in these circumstances, in addition to the reconnoitring Cavalry.

The question of allotting Artillery to an advanced guard has already been partly answered in discussing the above points. A strong advanced guard will usually require Artillery; a weak one can do without it. Still the number of guns allotted must always be in proportion to the Infantry. A battery will rarely be allotted to an advanced guard consisting of a battalion, although this would be the right proportion in view of the composition of an Army Corps; tactical considerations have here to be taken into account, and these do not make the detachment of small isolated bodies of Artillery desirable; but if a whole Artillery Detachment is allotted to one battalion, the latter becomes merely an escort to the guns. Such a measure will only be justified in exceptional circumstances. The distance between a weak advanced guard and the main body is generally so small that the Artillery can be pushed forward in case of need just as quickly from the rear.

Unless an advanced guard be of the strength of an Infantry Regiment (3 battalions), it will, in ordinary circumstances, not be provided with guns, whereas a comparatively strong force of Artillery is required in a pursuit or during a retreat. In any case, when this arm is attached to an advanced or rear guard, it is an indication that the Commander should carry out his duties more or less on his own initiative, in proportion to the number of guns allotted to him.

The question whether the Commander should give the Cavalry their orders, or should place them under the orders of the advanced guard Commander depends upon the strength of the Cavalry, the distance from the enemy, and on the particular situation. Cavalry which is pushed forward must be strong, at least three or four squadrons, in order to be able to hold its own for any length of time. If the enemy is at a great distance, it may be necessary to push the Cavalry further forward, so that it may have the greatest possible freedom in seeking out the enemy.

Many duties, *e.g.*, the rapid occupation of an important point before the arrival of the enemy, can only be carried out by the Cavalry when it has been pushed forward. On the other hand, if the enemy is near, the Cavalry fights in closer co-operation with the other arms, and is then best attached to the advanced guard. It is generally desirable to place all the service of reconnaissance and security under the control of one hand, as co-operation and economy of strength is thereby obtained.

The points to be observed in arranging for the security of marches are laid down in the F.S. Regns., paras. 148-155. Their further development is a question of tactics. It should be noted, however, that the arrangements for security cease as soon as the main body becomes engaged.

If a Cavalry Division is attached, as an exceptional measure, to the Army Corps, it should, if not entrusted with any special duties, be pushed as far to the front as possible. It would thus perform the duties of an advanced guard in the fullest sense of the term. Nevertheless, in such a case, the Infantry

Divisions must still take the usual precautions against surprise. Officers' patrols from the Divisional Cavalry are still indispensable for keeping up communication with the Cavalry in front, examining the resources of the country, reconnoitring roads, and similar duties, and are at the same time extremely useful in protecting the columns of all arms against the isolated enterprises of small parties of the enemy. The leading Divisions must adopt such a formation as to be able to afford immediate support, if necessary, to the Cavalry in front. The extent, however, to which weight may be attached to this principle must depend on the military situation at the time, and in a very great measure on the distance separating the bodies of Cavalry in front from the heads of the advancing columns.

Though reference in this subject has been confined to an advance only, the principles and rules that have been explained apply equally to a retreat or to a flank march; so far, at any rate, as contact with the enemy is concerned. In a retreat, it may be added, the rear guard should be given a strong force of Artillery if its object is to gain time by engaging the enemy, and every endeavour should be made to maintain a considerable distance between rear guard and main body. This distance, however, need not exceed the depth of the latter in column of route.

It is one of the first duties of a General Staff officer during a march to keep himself fully informed of the movements of all troops that may in any way whatever affect or concern the force he belongs to. If the orders issued on these points are not clear, steps must at once be taken to remove the uncertainty.

Measures must also be taken to ensure that communication with the neighbouring columns is kept up uninterruptedly, and also that the connection between the different bodies of troops belonging to the command, as laid down in the orders for the march, is constantly maintained. Should the rate of progress of a portion or portions of the force at any time have been increased irregularly, or in a manner not corresponding to

the object in view, the irregularity should be corrected by halting the portion or portions in question.

The General Staff officer should be with his General on the line of march, provided the latter does not assign him any special duties requiring his presence elsewhere.

The following may be taken as the nature of the special duties in question that would be required of him, and in case of necessity the Staff officer should himself take the initiative by asking for instructions on these points.

1. Riding to the head of the column, and beyond it again to the head of the advanced guard, with a view of obtaining information on the enemy and the country. As regards the latter point the usual considerations would be :— Selection of positions where outposts would be established, lines of advance to the attack, sites for bivouacking, halting places for rest (thus avoiding forming up whole Divisions and Brigades and long halts on the roads), quarters, and quarters combined with bivouacs. If there were several General Staff officers belonging to the force in question, it would be often advisable to assign one, accompanied by some mounted orderlies, during the entire march, to the advanced, or as the case might be, rear guard. Any observations he might have made on the above headings would then be more rapidly communicated.
2. Riding down the entire column from end to end, to be satisfied whether the whole were sufficiently closed up. Small deviations from the regulation distances between battalions, batteries, and other units, are of no importance. A constant lengthening, on the other hand, of such distances, or of the depths covered in column of route by the various units—at once indicated by each column being insufficiently closed up—shows a want of discipline on the march, an unnecessarily rapid rate of marching of the leading troops, or signs of exhaustion.

The latter soon causes many Infantry soldiers to fall out and be left behind. The General Staff officer riding rapidly back to his General, alongside the column, would report all such matters that he had seen for himself.

3. Personally examining the state of affairs in a neighbouring column of troops, as soon as there might appear to be any probability—such as, perhaps, would arise in the case of a coming engagement—of the column to which he belonged, being required to turn aside from its original line of march and be directed on some other point. Similarly his presence might be desirable with a neighbouring column to show it the way, if circumstances were such as rendered its co-operation desirable in a given direction, in the interests of the column to which he belonged. In the case of a Division having only one officer of the General Staff, some other officer of the Staff would usually be sent on such an errand.
4. Riding in advance of a column in retreat, to any defile that might have to be passed to ascertain for certain whether it could be passed without a check by the retiring troops. If, for any reason, a halt before passing a defile appears desirable or necessary, and the enemy is following close at hand, no time must be lost in looking for and selecting a position for the rear guard to hold.

d. Order of March of the 2nd Line Transport:

The 2nd Line Transport (under which heading baggage, supply and ammunition columns are included) considerably adds to the difficulties met with in making judicious arrangements for the march. The fact, indeed, speaks for itself, if we bear in mind that the combatant portion of an Army Corps (including spare horses, ambulance and ammunition wagons which, by regulation, accompany the troops in action) occupies much about the same depth (or length of road) in column of route as the supply, ammunition columns and heavy baggage together.

When active operations are being carried on with comparatively small forces, covering a considerable extent of country much

intersected with good roads, the case is an easy one to deal with. But it is a very different matter when, as in the concentration of large forces for battle, troops have not only to be massed in a comparatively confined space, but must in addition be in a position to form line of battle with the greatest possible rapidity. The necessity of providing for the baggage and columns, and of taking care that the movements of these *impedimenta*—which on an occasion like this are found to be so embarrassing—are not in any way likely to hamper or cross on the line of march the fighting portions of an Army, is wont at such times to produce a certain feeling of uneasiness.

The difficulty has been very simply got over before now by keeping all *impedimenta* as far as possible in rear—so far indeed, that in some cases neither could ammunition be replenished nor supplies issued to the troops within the following day, and that some units were separated for weeks together from their transport.

Convenient and simple though such a proceeding may appear at first sight, it is one completely ignoring the necessity that has been fully recognised of providing large bodies of troops with columns of every description, and units with regimental transport. Were it indeed possible or practicable, without incurring serious disadvantages, to dispense with all these accessories for any length of time, it would evidently be far wiser not to take them into the field at all. This question must, however, be considered as one definitely settled in peace as the result of experience gained in past wars. To make the best use of such *impedimenta* in war is, therefore, the duty of those who have to order the necessary arrangements.

It cannot, however, be expected that troops are invariably to be in immediate possession of all their wheeled transport, or that as a precaution against any, even in the remotest degree possible, failure of ammunition, the twelve ammunition columns of an Army Corps should all immediately follow the troops. Conditions that are liable to daily change must be met by arrangements varied to suit time and place, and by a judicious compromise between all the requirements that have to be satisfied.

There must never, however, be any doubt on the question of making every consideration give way to that of keeping the troops in readiness for action.

It would be wrong to carry this principle too far and keep troops constantly in readiness for battle when the situation does not require it, simply with a view to being *always* ready for action, even though it were unnecessary. By such a proceeding troops would be uselessly exhausted before they were needed to act.

Troops appear much less encumbered without transport, and undoubtedly are so for the time being. But they lose at the same time their manœuvring and fighting powers at an alarming rate, and it is to preserve and maintain such essential qualities that they are accompanied by some transport. It tends to military efficiency, and is, at the same time, a proof of judicious arrangements being made for the march, if units are, as a rule, every evening in full possession of their regimental transport, and the columns are also sufficiently near to enable the latter to make good any deficiencies.

Neither should the 2nd Line Transport be withdrawn too long before the troops march off. If the enemy is still at a distance, it should be left clear of the roads, and should follow at the prescribed distance when all troops to pass through the place have gone by.

The 2nd Line Transport should only be sent off early when retiring in close touch with the enemy, if it should happen to be with the troops under such circumstances.

If "touch" of the enemy has been gained, or it is a question when forces are advancing to a general engagement of diminishing as far as possible the depths of the various columns, everything that is not absolutely necessary for the coming battle must at once be eliminated and left in rear. Consequently, troops in such cases would only be immediately followed by their 1st Line Transport, i.e., spare horses and ambulance wagons, Cavalry by their collapsible boat wagons, and Engineers by their equipment wagons.

Small-arm ammunition wagons also should generally accompany the units to which they belong; but sometimes it may

be preferable that they should be formed in a body and follow immediately in rear of larger units (advanced guard or Brigade). All other Staff and regimental transport (forming the 2nd Line Transport) should then follow in the order of march of their respective units at a proper distance from the tail of the column.

If more than a Division were marching on the same road, the 2nd Line Transport should only be allowed to follow each Division when there was absolutely no possibility of having to bring forward all the troops marching on the road into action on the same day. It is only justifiable to allow units to be accompanied by all their regimental transport when a collision with the enemy is entirely out of the question. Consequently, in order to have at hand only such ammunition and supply columns as may be necessary under different circumstances, they are each divided into two *échelons*, with the exception of the ammunition columns of the heavy Artillery.

The *first échelon of ammunition columns* comprises, as a general rule, one ammunition column detachment, composed of two Infantry and four Artillery ammunition columns. The *first échelon* of the supply columns consists of a certain number of provision and transport columns and of field hospitals. The Commander of the Train Battalion is at the disposal of the Army Corps Commander for the purpose of the command of this *échelon*. It would follow, under ordinary circumstances, in rear of the combatant forces, at a distance of about half a day's march. If the Divisions were marching by different roads far apart, it might be directed either to follow one or be divided and follow both.

In order to facilitate command, the first and second *échelons* both of the ammunition and of the supply columns are combined respectively into "first and second *échelons* of ammunition and supply columns," which are under the command of the senior officer present.

When an engagement is expected, a portion of the ammunition columns must follow sufficiently close to enable ammunition to be replenished, if necessary, at certain points of the scene of the encounter *during* the action.

It will usually be sufficient in the case of an Army Corps if the combatant troops are immediately followed by about one or two small-arm and two or three Artillery ammunition columns at a short interval, *i.e.*, *preceding* the 2nd Line Transport of the troops, when there is a prospect of an engagement. The 2nd Line Transport cannot, of course, rejoin the troops until the action has been decided beyond all doubt. For similar reasons, some field hospitals (generally four) would follow immediately in rear of the combatant troops, and in front of the three or four ammunition columns referred to. It is advisable to attach such columns and field hospitals to the Divisions.

The *second echelon of ammunition* and supply columns, which consists of the remainder of these columns, acts as a reserve to the first *echelon*.

It is rarely complete in itself, though forming an integral part of an Army Corps, and, under ordinary circumstances, would follow at a distance of about a short day's march.

The composition of either *echelon* varies like other units according to circumstances. For instance, a column of the first *echelon* that has issued all its ammunition would at once quit the first *echelon*, and return to the place where the field ammunition parks were stationed, its place being taken for the time by a column of the second *echelon*. The latter would have, consequently, to make a two days' march on that day, unless it were a rest day for the first *echelon*. A similar process would be followed in replacing any field hospital that had been established, and thus left the first *echelon*, or in replacing empty supply columns.

Considerations of supply may make it necessary to march a part of the supply or transport columns immediately in rear of the leading division of an Army Corps. This entails such difficulties that it is preferable, if possible, to march on a broad front, *i.e.*, in the case of an Army Corps on a front of two Divisions.

The Divisional bridge trains are either attached to the Engineer field companies if they are likely to be wanted; or they will march with the 2nd Line Transport.

The Corps bridge train forms, under ordinary circumstances, part of the second *echelon*, but would be brought to the front should its employment appear at all possible.

The field bakery column would rarely march with the second *echelon* of ammunition and supply columns. It would be brought forward as far as possible to establish field bakeries at convenient places, and follow the movement of the troops by successive stages, which should be as long as possible, using the railway or requisitioned country transport as a means of conveyance, thereby saving as much time as possible, and avoiding any unnecessary fatigue on the part of the men, so as to enable them to work all the harder when halted. A field bakery column can be divided into sections or groups, which may, if necessary, be attached to the different Divisions.

The second *echelon* is, unless unexpected changes in the direction of the march have to be suddenly made, generally speaking, able to reach the destination assigned it in Army Corps orders without hindrance or check, and has only then to be prepared to forward at once to the first *echelon* such component parts as might be required. The first *echelon*, however, is often assigned points where the different fractions composing it must halt till further orders. Such points would be chosen, as in the case when the *echelon* in question must be temporarily kept in rear owing to an engagement coming on, so as to enable the columns to be parked, and afterwards proceed without check or delay in different directions. These conditions are best fulfilled by places where roads intersect or meet, and where there is plenty of open space in the immediate vicinity. As a precaution against things taking an unlucky turn in an impending action, columns must never be allowed to pass defiles until they are absolutely required. The places where they are to be halted must, however, be indicated to the troops whenever such information would be necessary to them, as, for instance, in the case of ammunition columns.

The commanders of *echelons* must keep in constant communication with the Commander. They should be informed as soon as the result of the engagement can be foreseen.

There only now remains the question of affording the 2nd Line

Transport efficient *protection*. Every detachment made for this purpose not only weakens the combatant troops, but also entails the breaking up of units, for it is impossible to detail whole battalions or squadrons to escort columns on the march. Consequently, as the *personnel* of the supply and ammunition columns are armed and generally able to keep off any small parties of the enemy, special escorts are only required in very exceptional cases. The best protection may be said really to consist in judicious arrangements for the march, in the efficient performance of all reconnoitring or scouting duties, in the maintenance of strict discipline and order in the various supply and other columns, and finally in successful operations against the enemy.

In the case of a retreat through a country in a state of insurrection, the 2nd Line Transport, which in this case would retire before the combatant troops, would have certainly to be provided with a special escort or covering force (Infantry for their immediate protection and a respectable force of Cavalry to reconnoitre). Under such circumstances supply and ammunition columns should be sent to the rear as far as possible. Those that are immediately required to supply the troops should be made to halt at or near points on which the latter are retiring, and having once supplied their wants, immediately to rejoin their respective *échelons*, either by a night march or a double day's march.

2. THE OBJECT OF THE DAY'S MARCH, AND THE USE OF THE ROADS.

It would be a great mistake, when drawing up orders for the march, to take a day's march as constituting in itself a distinct and independent operation of war, and one that can be dealt with by itself.

The positions occupied by an Army or force at the end of a day's march must necessarily directly affect the arrangements that have to be made for the movements contemplated on the morrow. Consequently, the fact that orders for to-morrow are only the preliminary of orders for the day after to-morrow, must never be lost sight of. It never does to live from hand to mouth: The turn that things are taking or are likely to take

in the military situation, must be maturely weighed and considered, and all arrangements made to meet the march of events as far as is possible. These considerations are also of importance in determining the *object of each day's march* and in making the *best use of the roads available*.

The military situation at the moment, viewed both from a strategical and tactical point of view, is of first importance. This often necessitates an attempt to reach certain points, or take up a certain position in a given time. As a rule an enterprise of this description can only be accomplished by several days' marching, as strategical operations generally cover a considerable extent of country and require more than one day for their execution. If the Army or force in question is in immediate contact with the enemy, the daily marches to be performed, and the roads by which they are to be accomplished, mainly depend on tactical considerations in connection with the military situation at the moment. But if the enemy is not in the immediate neighbourhood, tactical considerations cease to be, for the time being, of the same importance, and attention should then be chiefly paid to maintaining and preserving the fighting strength of the troops. Bearing this in mind, the following are the points which deserve special care:—Marches should not be too long, and arrangements should be made for intermediate halts; the troops should be adequately housed and fed at the end of each day's march; outpost and scouting duties should not be more severe than circumstances require; and, finally, care should be taken that in arranging each day's march any alterations that might become necessary in the direction of march on the morrow are foreseen and provided for.

In estimating the time required to accomplish a given distance, the length of a day's march should not, unless in a case of emergency, be taken to exceed an average of 22 kilometres (14 miles). In fact, in the case of large bodies of troops, this is very severe marching indeed to be maintained for any length of time without halts for rest, and can only be kept up by large forces, as a whole, if the troops are spared fatigue in every way possible. With this object, troops should march in

separate small columns, thus avoiding the closing up and opening out that so constantly take place in large columns and entail extra fatigue. Again, it is not always necessary for a large force to be concentrated before, during, or after the march. As long as the enemy is not in the immediate neighbourhood, it is far better to assign to the separate portions of the force different objectives situated in alignment and connected by good communications, and consequently to give *different roads* to the separate columns. How far such a proceeding is feasible must, of course, chiefly depend on the total strength of the whole force in question as compared with the *number* of roads available, and the extent to which these are *practicable* for the different arms.* To make the best use of all the available roads of the country is the only sure means of confining the hours during which troops are kept on their legs to the early part of the day.† This is a question which affects the efficiency and welfare of the whole force concerned, and materially improves its marching qualities as a body.

In dividing the total distance that a force has to accomplish in a given time into day's marches, it scarcely answers the purpose to fix the latter by the somewhat mechanical process of ascertaining the average length of each day's march from the number of days available. On the contrary, it often happens that a comparatively long day's march on one day may, with advantage, be compensated for by a short one on the day following, when circumstances show such an arrangement to be desirable. This would be the case, for instance, when passing a tract of country unfavourable to military operations (extensive forests, long defiles, ranges of mountains), pushing on to seize a defensive position, anticipating the enemy at a point or points of strategical importance, endeavouring to ensure better quarters or supplies. The question of obtaining a good

* Compare Chapter V (Reconnaissance of Roads), both as regards this point and the question of supplementing roads by temporary passages across country.

† The hours of marching off, putting aside cases when troops have to arrive at their destination at stated times, vary according to the time of year, the weather and the way in which the men are housed. An earlier start can be made from bivouacs than from quarters.

water supply has often, before now, been considered a sufficiently good reason for lengthening or curtailing a day's march.

It may be necessary in certain cases to divide the day's march into two parts. This is an arrangement which must, for instance, be made to apply to a large force marching in separate columns on two roads which unite. One of the columns has, in this case, to wait for the other to pass; but instead of postponing the hour at which the rear column is to quit its quarters or bivouacs, it is a better plan, as a rule, to order it to march at the usual hour and halt at the junction of the roads. The men can then rest and cook dinners, and when the other column has passed and the road is clear, the march may be resumed.

If a change in the direction of the march on the following day appears probable, the various forces should be so distributed as regards cross roads and communications as to enable them to march off either in the original or new direction, without having to make any considerable detours or causing any material alteration in their formations.

If an unexpected change in the direction of march becomes necessary, a fresh distribution of the roads, by which every possible use is made of those available, is required, if possible, before the troops have begun their march in the old direction. When making a wheel the marches required from the troops on the outer flank will be the more exacting the quicker it is necessary to reach the new front, and the earlier the troops on the inner flank, *i.e.*, that nearest the enemy, may expect a collision. Particular attention must be paid to the fresh allotment of roads for the communications of the troops; for supply and ammunition columns on the outer flank, in endeavouring to shorten their marches, may easily trench upon the roads allotted to other corps and cross their line of march.

If it is a question not merely of a wheel, but of carrying out a change of front to a flank as rapidly as may be, it will not always be possible to avoid temporarily allotting more than one Army Corps to one road, even though every effort is made to use the roads to the utmost. This naturally causes great difficulties,

which can only be obviated by immediately despatching Staff officers to each of the new roads to regulate the hours of march for all units which have to move by them. In spite of this, experience shows that interruptions to the march still occur, which can only be limited to an appreciable extent by improvised and supplementary measures taken by the units concerned.

But if we are in close contact with the enemy, the presence of the latter must often directly affect the choice of objectives, inasmuch as it must frequently be first of all decided whether he is to be attacked and driven from positions where he has established himself, and which we intend to occupy, or beyond which we wish to continue our advance. In the case of a retreat, too, we may often be obliged either to continue to retire for a greater distance than was originally intended, or turn and show fight to avoid being pressed any further by the pursuing enemy.

It must always depend on circumstances whether an engagement should be risked, or whether we should allow the choice of the position to be reached by our forces to be imposed on us by the enemy. In most cases the General Commanding the Army would issue his orders on the subject. These, in order to avoid all uncertainty in the arrangements of the subordinate leaders, and prevent any crossing or collisions between the various columns on the march, should fix, in addition to the points that the latter should endeavour to reach, lateral limits to the movements of each column (so far as the whole force has been divided into columns by the General holding the command in question). Moreover, the arrangements which have to be made for the marching, halting, quartering, and even subsistence of the troops are so intimately connected, that not only the roads, but also the towns and villages situated on or near them, would have to be assigned to the troops forming the various columns.

An area of country running in a direction parallel, as far as possible, to that of the general movement would consequently be given to each column, and within this the troops forming the column would have the exclusive

right of using the roads, quartering on the inhabitants, and even requisitioning supplies. At the same time they would be called upon to provide for all patrolling and outpost duties, and to maintain order within the area in question. During active operations the limits of the latter would be practically determined and fixed by the roads intersecting the country, for, putting aside battles (and even then the bulk of the forces arrive on the spot by the roads of the country), marching is practically a daily occurrence, and everything else must, for the time being, be made of secondary importance.

It would be wrong, as a rule, to take a main road as the line of demarcation between two such areas, even though the road in question were distinctly assigned to the use of the troops in one of these only. All by-roads and lateral communications in the immediate neighbourhood of a high road belong, so to speak, to it. Rivers or streams, wooded tracts, ridges or chains of hills, in fact all features running in the general direction of the movement, and offering in themselves an obstacle or impediment to the march of troops, form much better natural lines of demarcation in a large tract of country. By choosing these as forming natural limits between each strip of country, it would rarely happen that any practicable road running in the right direction could not be taken advantage of.

The subordinate leaders have next to sub-divide the country in the areas assigned to them by superior authority, among the forces they command.

It would be absolutely impossible in the case of very large forces for a single authority, *i.e.*, the General Commanding-in-Chief, to undertake all the detail connected with this—that is, to draw up all the necessary arrangements for marching in separate columns on points more or less connected with each other, and to make at the same time the best use of the roads of the country. This can, in fact, only be carried out by the strict application of the principle of the division of labour, by which all parts of the military machine do their separate share of the work.

and co-operate with the directing power in attaining the common end.

The General commanding all the forces concerned is only called upon to issue detailed orders when there appears a possibility of one column interfering with the movements of others; as for instance, when a certain defile has to be passed by more than one of the latter, or when it is impossible to avoid one line of march crossing another.

In the first case, the hour at which the leading troops of each column are to be in readiness at the beginning of the defile must be stated in orders. Another plan has sometimes been proposed, and that is—to fix the hour at which the tail of each column must have cleared the defile. But to carry this out in the case of one column following another becomes next to impossible, or at any rate, can only be carried out by enormous exertions on the part of the troops, if the leading column ceases, from one cause or another, to be punctual in its movements. Besides, it is evident that if the order fixes the hour at which the head of the second column is to be in readiness to enter the defile, the leading column is thereby at the same time informed as to when its tail is expected to have cleared it. A careful estimate of the time taken by each column to clear the defile is as necessary in one case as in the other.

A *crossing in the lines of march* should, if possible, be avoided, but need not necessarily lead to a *crossing of the columns on the march*. This is a matter to which attention cannot be too strongly drawn, though it might hardly be thought necessary to counsel precautions against mismanagement of such a glaring and self-evident nature. It is clear, in fact, that the loss of time entailed on the column or portion of the column that is obliged to halt, is given by the length of the other column that continues to move on, and its rate of marching. If both columns are pressing on, the arrangements which cause them to cross each other on the march—when possibly

they are about to deploy into alignment for battle—must be seriously at fault.

No consideration can in any way justify an order entailing such a movement at such a moment. It would be just as reasonable, indeed, at a critical moment like this, to bring a unit that was marching far back in the column to the front, and for this purpose cause all the remainder to halt, merely for the sake of having that particular unit to lead the way.

It is sometimes next to impossible, however, to prevent the lines of march of two columns crossing each other. After a decisive battle has been fought, and especially when the reserves have been engaged, troops may easily find themselves, at the close of the engagement, occupying positions alongside each other on the battlefield, very different from those they mutually occupied on the march. Before continuing the advance on the following day it must, therefore, be decided whether the troops in first line are to be kept in the order in which they actually stand on the ground. If it be decided that they shall remain so, the lines of march of their respective baggage columns—in a word, their communications—must necessarily cross each other.

When such an alternative has to be settled, it may be said to be almost invariably better to revert to the original order in which the troops in first line were marching before the action; but this cannot be done without a certain amount of crossing of the lines of march. It does not follow, however, that the columns themselves should cross when on the march, for care must be taken that the hours of marching off are so ordered that no column when on the march should be obliged to halt because its line of march was being crossed by another.

The inconvenience of such an occurrence may sometimes, to a certain extent, be avoided by fixing the point of crossing of the lines of march, near the bivouac of one of the columns, or place where it is to be assembled. It can then cross the line of march of the other column in as broad a formation as possible, and only cause it to make a comparatively short halt.

If these considerations are ignored and the necessary precautions neglected, the troops suffer from unnecessary fatigue by being kept on their legs on the roads during long delays. In addition to this, very disagreeable disputes are almost certain to arise between officers commanding columns, as nobody in cases of the kind is inclined to yield quietly and allow another to continue his march. Crossings in the line of march that are unavoidable must consequently be foreseen, and all evil consequences avoided by the most careful arrangements of those in superior authority.

3. SPECIAL PRECAUTIONS.

Reference has already been made, when dealing with the strengths and formation of columns, to precautions that have to be taken on the march against surprise and the sudden approach of the enemy. Allusion was made at the time to the wide field of action of Cavalry, to the formation of advanced guards, and to flanking detachments. The detail of all such precautionary measures must be left to the independent action of officers in command; but they must be informed of the object and intention of the movements that are being carried out, the order of march of the main body, and all that is known or conjectured as regards the enemy.

It may, however, be often very desirable in addition to, and independently of, such measures, to order special officers' patrols to be sent in certain directions with the express purpose of gaining information which the usual precautionary measures against surprise would not necessarily give.

Those in supreme authority must not lose sight of the mutual relations which exist between precautionary measures against surprise when on the march, and similar measures when halted. The importance of this is at once seen in the question of

relieving troops employed on outpost or detached duty. This had always better be done before commencing a fresh march, that is to say, in the morning, than when a march is completed, *i.e.*, in the afternoon or evening. If the reverse course were adopted, there would always be a certain risk of suddenly interrupting for a time the advanced troops in following up any information they might have been able to gain during the march as to the enemy's movements. In addition to this the march on one day often begins under circumstances very different from those under which the march on the preceding day was made. With a change in the aspect of affairs, less harm is done by a change in the executive.

In marching in an unknown country, it is often advisable, especially when moving through mountainous or wooded districts, to employ, as a matter of precaution, guides knowing the country. Maps do not always show roads and communications in a wooded country with sufficient accuracy to make mistakes impossible. In one's own or in a friendly country, it would be a matter of little or no difficulty to procure and make the best use of guides. Indeed, the services of mounted men could be nearly always procured; but in an enemy's country any voluntary assistance of this kind from the inhabitants must never be reckoned on, and it would be sometimes even impossible to obtain the class of men required by forcible means, from the very fact that there would be none to be found. Moreover, in using a guide belonging to a hostile population, care should be taken that he is strictly watched and guarded during the whole time of his employment, so that he may be punished at once in the event of his wilfully leading the column astray.

If there are no particular reasons to the contrary, it is well to alternate the positions of troops in column of route from time to time, so that the same troops do not invariably find themselves bringing up the rear. The tail end of a column is, in fact, the most tiring and disagreeable position on the march, and the desirability or even the necessity for alternating or

changing places is therefore self-evident. A favourable opportunity must, however, be chosen to make these changes. It would, for instance, be very injudicious to make the change in question at the end of a day's march, if all the troops forming the column were *echeloned* along the road, in bivouacs or quarters, or both combined, for a distance corresponding to the depth of the column. Again, to bring to the front on the following morning troops that were at the time bringing up the rear of the column would entail on them a severe amount of additional marching, and they would certainly much prefer to remain at the tail of the column with all its disadvantages. Changes of this description should be made, as a matter of choice, when the troops forming the column occupy bivouacs close together or in the same alignment, or when a change in the direction of march is made after an important engagement—in a word, when a favourable opportunity for so doing presents itself.

Night marches require special precautions. It is not the obvious disadvantages inherent in night marches so much as defective preparations and insufficient precautions, due to ignorance of their nature, which have brought night marches into disrepute. The chief disadvantages of night marches are that obstacles, such as broken ground, stones, roots, &c., have a special effect, and that men and horses are deprived of their night's rest. A march carried out in complete darkness naturally takes longer and requires greater exertions than a march by daylight, or bright moonlight; the maintenance of order and communication and the transmission of orders is difficult in the dark, still it is not much more difficult than it would be on a very foggy day, or in passing through a dense forest. If the troops are not well disciplined there will be stragglers remaining behind on purpose; disorder which has once crept into a column will spread rapidly and assume the character of a flight. If a march by day is protracted into the night much discomfort is caused to the troops by going into quarters in the dark.

If all these disadvantages are recognised it is possible to over-

come them or at least to diminish them by careful preparation. In the first place, the troops must have sufficient rest before the night march, the roads to be followed must, if possible, be reconnoitred by daylight, and marked if necessary by men with lanterns, so that mistakes as to the direction to be followed may be obviated. Maps and compasses should be marked with luminous paint, so that they may be more easily used. Particular attention must be paid to the concentration of the troops for a night march, and the composition of the columns. Since mounted troops have greater difficulties to contend with on a night march, and cannot defend themselves so easily as infantry, formed bodies of mounted troops should be placed far back in columns of march, and all vehicles should follow at the end of the column. The distances between the main body and advanced and flank guards, which should chiefly be composed of Infantry, with a proportion of mounted orderlies, can be reduced to a half or even less. The connection between the various units composing columns should be maintained by a number of connecting files. All noise must be avoided when in the neighbourhood of the enemy, in order not to imperil the success of the enterprise. Rifles should not be loaded, for firing in the dark is only a waste of ammunition, and steel should be used if a collision with the enemy occurs.

If night marches are ordered in hot weather in order not to expose the troops to mid-day heat, it must be considered whether the advantage of a cooler march compensates them for the curtailment of their night's rest. The situation frequently requires night marches to be carried out (F.S. Regns., paras. 29 and 247), *e.g.*, when a decisive engagement is imminent troops at a distance must start at night in order to arrive in time. If the enemy is occupying a strong prepared position, troops may often be got by night into preparatory positions favourable for an attack at dawn. A night march will often be the best means of surprising an enemy by a turning movement, or of withdrawing from an unfavourable situation. Night operations will often be of great importance in minor warfare. Large masses of troops should, however, never be involved in fighting in the dark. One

fights at night with bandaged eyes, leading is impossible, and one is the victim of chance.

4. FORCED MARCHES.

The average day's march of a large Army during a movement which does not include any long periods of rest, rarely exceeds 15 kilometres ($9\frac{1}{2}$ miles), and, as a rule, may generally be taken at somewhat less. This includes a halt every now and then for a day at a time. If this average be exceeded, the marches may be considered as *forced*. Without the use of railways, which, owing to the enormous size of modern Armies, can alone afford sufficient assistance, forced marching can only take place for short periods, and then only by portions of an Army at a time.

With a view to obtaining the highest results from this particular measure, attempts—in themselves perfectly legitimate—have been made before now by military experts to arrive approximately at certain conclusions, by establishing theories founded on a somewhat arbitrary comparison of the relations that exist between the amount of work that men or horses are capable of and the rest they require, and thence deducing rules for general application. These ideas have, however, now been completely abandoned. We must first—in each case that occurs—ask ourselves the question whether a forced march, *i.e.*, one that exceeds the average day's march, is absolutely necessary, how far and to what degree such forced marching is justified or called for by the military situation at the time, and whether the object to be gained is fully worth the expenditure of fighting power inseparable from an undertaking of the kind. Once the case is perfectly clear, forced marches may be ordered, but they must be energetically carried out, and nothing neglected that may in any way spare fatigue on the part of the troops. The chief consideration, then, lies in using the best roads available, providing good accommodation and liberal supplies, and, if possible, causing the packs of the Infantry to be carried for them (F.-S. Regns., 314).

There is, however, even in the most favourable circumstances, always a certain limit imposed by Nature on the endurance of man or horse which cannot be exceeded without reducing troops to a condition unfit for fighting, brought about both by the reduction in numbers caused by the falling out on the march and by the exhaustion of those who do not fall out.

Let us first see what may be considered as the maximum distance that can be accomplished in a day, *i.e.*, in the course of 24 hours, taking the case of the best time of the year (spring or autumn), good weather and a start in the morning after an undisturbed night's rest.

In the case of Cavalry or Horse Artillery only, if a start be made at about 6 o'clock in the morning, a distance of some 35 kilometres (21 miles) can be got over by 11 o'clock in the forenoon. A halt till 3 o'clock in the afternoon enables dinners to be cooked and eaten, and horses to be fed and watered, after which another stage of some 25 kilometres (15 miles) may quite well be got over by 7 o'clock in the evening. This gives a total distance of some 60 kilometres (36 miles) performed by the main body in 13 hours, and if the march is in the presence of the enemy, a far longer one in the case of those who have, in addition, to perform scouting and outpost duties. This is a march which any Cavalry Regiment in hard condition could occasionally undertake. To order the march to be again resumed at midnight, however, *i.e.*, after a rest of some five hours, is a proceeding that could only be justified in cases of the greatest emergency. But if it be determined on, an additional distance of some 30 kilometres might be accomplished by 6 o'clock on the following morning, making the total distance marched in *one day*, or 24 hours, some 90 kilometres (54 miles). Of course, the total distance thus covered in the time given might be divided into stages, in other ways, according to circumstances. That a performance of the kind could not be immediately repeated, is, of course, equally clear. Cavalry that have been marching from midnight to 6 o'clock in the morning, after the fatigue on the preceding

day, could not possibly undertake another march of 30 kilometres in five hours without resting and feeding and watering their horses. It will generally be found, in fact, that on the whole a greater distance can really be got over in several days by ensuring the troops as much rest as possible.

Infantry can, in favourable circumstances, by starting at 6 o'clock in the morning, march some 25 kilometres (15 miles) by 10 o'clock in the forenoon. After a rest of about four hours to cook and eat dinners it is quite possible to march an additional distance of some 20 kilometres (12 miles) between the hours of 2 and 6 in the afternoon. This gives a total distance of 45 kilometres (27 miles) for the 12 hours of the day. If the march is again resumed at midnight, 15 kilometres may be done by 6 o'clock on the following morning, giving the total distance marched in the 24 hours as 60 kilometres (36 miles). A performance of this kind, however, cannot be immediately repeated.

It would be a mistake to suppose that when the days are long the maximum distance that can be marched in 24 hours is greater than when the days are short. In the former case it must be remembered that the heat generally accompanying long days has an exhausting effect on men and horses.

We may therefore take 90 and 60 kilometres (54 and 36 miles) in one day (24 hours) as about the *maximum* effort of the mounted and dismounted arms respectively, under the most favourable circumstances. If marching after this is to be resumed, a longer rest than usual must be allowed. Now, even restricting this to three or four hours, it is very evident that it would have been more advisable to have rested during the night and started later, say at about 4 o'clock in the morning, on the second day. The rest of some 9 or 10 hours during the night thus obtained would have enabled the march to be continued from 4 to 11 in the forenoon. We must not be surprised, however, if the distance performed in these seven hours is not greater than that got over on the preceding day in five or even four hours.

If marching is to be renewed in the afternoon we can only expect to do the same distance as on the preceding day by taking far more time about it, so that a full night's rest until 6 o'clock on the following morning becomes absolutely necessary if the movement is to be continued on the third day.

Thus we may assume from the above that the maximum distance that can be performed in two days (or 48 hours) is 90 kilometres (54 miles) in the case of Infantry and 120 (72 miles) in the case of Cavalry, to which 15 and 30 kilometres (9 and 18 miles), however, may be respectively added if the march is pushed on during the night between the second and third day till 6 o'clock in the morning, but this assumes the march to be then brought to a close for a time. Otherwise, if troops have had their full night's rest, a distance of 30 and 40 kilometres (18 and 25 miles) respectively may very well be got over on the third day, and the fourth day still see the troops in question in a fit state for marching or fighting.

Besides the somewhat arbitrary assumptions that have been used in the above calculations, in which a considerable reduction should be made for previous fatigue and exposure, bad quarters and food, indifferent roads and unfavourable weather, it may as well be mentioned that a night march must be considered as only adding, once for all, to the maximum distance that can be done in the time, and as reducing the amount of marching that can be done on the following day in proportion. Consequently, if it is a question of forced marching for several days running, the regular night's rest of from 9 to 10 hours' duration will be found, on the whole, to increase instead of diminish the total distance performed.

Very much smaller results, in the long run, however, must be expected, when, in the case of large bodies of troops, it might for some reason or other appear desirable to form up the whole force from column of route in a position of readiness or for bivouacking, either at the end of each day's march or even during the long halt that usually takes place about noon. In

the case of small bodies, or when a long column is formed up along a road in detachments at distances corresponding to the depths they occupy in column of route, both during halts for rest and on completing each daily stage, this remark does not apply. In the case of small detachments, it is indeed quite possible to enable longer stages to be performed, if, especially in the case of Infantry, the men are relieved from the trouble of cooking their food by being directly fed by the inhabitants on whom they are quartered, and are thus enabled to enjoy more complete rest when halted. This, however, is a proceeding which is only possible when the forces advancing are not too large and can, without fear of the enemy, spread themselves over a comparatively wide extent of country, and consequently draw to the full extent on its resources as regards food and shelter. Arrangements for doing this can then be prepared beforehand by the General Staff and Intendance, covered by a force of Cavalry pushed a day's march or so to the front.

Picked bodies of Cavalry and small detachments of Infantry carried in carriages* can accomplish enormous distances in one or two days' march. Owing to the weakness of forces of the kind, however, their employment must always be very restricted. They cannot well separate themselves for any length of time from the main body to which they belong, and which naturally moves more slowly, unless they are constituted as flying columns. Flying columns, however, cannot be expected to perform very brilliant services, unless they are acting in their own country, or can rely on the support of the inhabitants. Experience shows, moreover, that they constantly require a whole day's rest at a time, just as other troops.

A day's rest is equally necessary every fourth, or at the least every fifth, day in the case of large forces moving by forced marches, more especially with a view to replacing the wear and tear of *matériel*. This has especial reference to the boots of the dismounted branches and the shoeing of the horses. It should

* A two-horse wagon can carry only 10 men. It takes a long time to collect the necessary transport.

be remembered that the extra wear and tear in question does not result so much from the three or four days' marching, as from the total distance that has been got over in these three or four days. This is equal, in fact, in many cases, to what would have been performed under ordinary circumstances, in perhaps from six to eight days. Again, on days when troops have marched nearly double the usual distance, men on reaching their billets are too tired and have but little time to undertake repairs to boots and clothes.

Forced marches are impossible, except with very highly disciplined troops. When troops are wanting in discipline, or, in other words, when subordination to the will of the superior has not been so far instilled into their nature as to make the power of duty overrule that of physical feeling, a large percentage of men are certain to fall out and be left in rear, in addition to, and independently of, casualties that arise from unforeseen circumstances. Under circumstances of the kind it is far better, in the long run, not to attempt too much.

5. THE USE OF RAILWAYS IN WAR.

We must be careful not to over-estimate the use of railways as a means of rapidly conveying large masses of troops to and fro during active operations. In the first place, ordinary railway traffic cannot be entirely suspended for any great length of time, as the very existence of the civil population is, to a certain extent, dependent on it. Consequently, a portion only of the resources of the railways is at the free disposal of the military authorities, and therefore always available for immediate use, and even that portion has often to be stubbornly contended for. And again, if we bear in mind that the military *administrative* authorities must always have by far the greater part of the available rolling stock at their disposal to keep the Army fully supplied with everything it requires in the shape of supplies and stores, but little must remain to the *combatant* authorities to enable them to move large masses of troops.

The difficulties of the question are best seen if we take the

case of an Army occupying an enemy's country after successful offensive operations, when the railways, after being repaired and put in working order, have to be provided with both *personnel* and *matériel* brought from the invaders' country.

If the lines are blocked by fortresses, or if important engineering works, such as tunnels or large bridges, have been destroyed, the necessary deviations and repairs can only be carried out by technical troops, and by bringing up large quantities of tools and material. Railway lines can be constructed at an average rate of 3 kilometres ($1\frac{1}{2}$ miles) a day. But even when railway communication with home has been established, it is still very difficult to maintain a constant flow of regular traffic, for the further the railway system runs into the enemy's country the more irregular the circulation of rolling-stock becomes (*i.e.*, the return of rolling-stock to the terminal stations), in spite of the establishment of rolling-stock depôts at collecting stations and junctions. Rapid unloading and return of rolling-stock can alone prevent delays, such as were greatly prejudicial to the employment of railways in the year 1870.

Railway lines in the theatre of war are always exposed to the danger of being blocked or destroyed by hostile enterprise. The Cavalry of all great Armies is provided with the necessary apparatus for this. The safety of a railway line cannot be assured, in spite of careful watching, if it is within reach of hostile patrols, quite apart from interruptions caused by hostile inhabitants, which cannot be prevented even by the severest measures. Therefore if troops have to be despatched over a section of railway which is exposed to these dangers, it is desirable to form mixed trains, for mounted troops are practically useless if a train is stopped—say on an embankment. Infantry can detrain quickly anywhere, and if they have the necessary material with them they can repair minor demolitions.

On the other hand, when an Army retires on its own soil in the face of an invader, the *personnel* and *matériel* of the railways abandoned to the enemy either precede or accompany the retiring forces, and can be turned to account by the latter on the

railways that still remain at their disposal, so as to increase their facilities for traffic.

But no movement of troops on an enormous scale, such as would take place according to pre-existing arrangements on the concentration of the Army before hostilities commenced, could ever possibly be expected to be carried out with the same regularity and despatch when arrangements would have to be made during active operations. In the first case, advantage is taken of the network of railways covering the country, and the rolling-stock belonging to them, to convey troops scattered in their various garrisons, by several through routes, straight to the rayon of concentration. But in the second case it is a question of moving a large concentrated force from one point to another, there being, perhaps, only one line, or at the most very few lines, of railway available, probably provided with a limited amount of rolling-stock.

The orders for such movements on a large scale will usually only be issued just before they have to be executed, because the necessity for the movement can rarely be foreseen, and has to be kept secret as far as possible. It is not feasible to keep the necessary rolling-stock in readiness for any length of time, in view of the necessity of maintaining a constant flow of supplies. But in any case the combatant Staffs must put themselves into communication with the Military Railway Staff in good time, in order to obtain accurate information as to the feasibility of the undertaking, as to suitable times for beginning the movement, entraining and detraining places, and as to its duration, so that impossibilities may not be demanded. If troops which are in touch with the enemy have to be despatched, entraining places must be fixed in accordance with the tactical situation, *i.e.*, the entraining should be, as far as possible, undisturbed by the enemy. *Vice versa*, similar measures must be taken with regard to detraining. Alterations or interference by Commanders of units in the railway arrangements may lead to disastrous consequences. Technical administration must always be in the hands of one man; if this is observed the execution of technical details is not difficult.

When the force is small but the distance it has to be moved is considerable, as, for instance, that from one scene of operations to another, a great saving of time may certainly be effected by using railway transport. But it may very possibly happen that when the distances are short and the forces to be moved large, not only may no time be gained by such a proceeding, but the interruption of regular traffic on the lines of railway used may, in the end, cause a considerable delay in the assembly of the whole force at the point or points whence it is to begin a new series of operations.

The conveyance of large masses of troops by rail with improvised arrangements only is, in fact, an undertaking beset with every kind of difficulty apart from the danger of interruption by the action of the enemy. There are, of course, cases when difficulties of the kind would be less liable to be met with—as, for instance, in the defence of a line of coast, when the conveyance of troops from one point to another is a matter that can be foreseen, and steps taken beforehand for carrying out the operation with certainty and despatch.

The arrangements that are necessary for the movement of troops by rail, of this or any other kind, that may have to be undertaken during active operations in the field, are made on precisely the same principles that apply to the strategical concentration of the Army before the commencement of hostilities.

If both the lines and stations of detrainment of a railway are perfectly safe from the enemy, there is no reason why comparatively small bodies of troops should not be conveyed by rail to the immediate neighbourhood of the very battlefield itself, in support of the force that is actually engaged with the enemy.

For the transport of large bodies of troops by sea, *see* Part II, Chapters X and XII; for landings and the measures necessary to oppose them, *see* Part III, Chapter X.

CHAPTER V.

RECONNAISSANCE.

A. GENERAL OBSERVATIONS.

RECONNAISSANCE in every sense of the word is essentially one of the duties of the General Staff.

It is not to be inferred from this that a reconnaissance cannot be made by officers of other branches of the service. In some cases the object of the reconnaissance can perfectly well be arrived at by a young Cavalry officer, and in others the co-operation of officers of the special arms may be essential. But the officer of the General Staff must be able to undertake every kind of reconnaissance which is not too involved in technical details.

It may be laid down at once as a principle to be strictly followed, that whereas everything that in any way bears on the military situation at the moment must be most carefully examined, all that does not apply to the questions under consideration should be as pointedly avoided. This is very necessary. Otherwise the examination of a tract of country and the report on it, which would depend on its extent, would occupy more time than would be available in war for the reconnaissance, and for the writing and subsequent reading of the report.

A sketch, either as a means of supplementing or illustrating a map, is very often a most valuable addition to a report, and may in some cases even be substituted for the latter. When time is short a verbal report must sometimes take the place of a written one. Under such circumstances a sketch cannot, of course, be

expected. But even in this case it is very advisable that the officer reporting verbally should make sketches of what he has actually seen himself, by which he can illustrate any verbal report he is making. It is desirable, also, in all cases to make corrections and additions on the spot on the map actually used in the field; and further to explain these, if necessary, by notes made at the time. This plan has the advantage of showing at once whether everything of importance has been observed during the reconnaissance, and further, the fact of making notes of the impressions gained at the time acts as a great assistance to the memory.

The officer making the reconnaissance must in the first place thoroughly understand its object and the military situation at the time. He must not only collect information on such points as have been indicated to him, but must sift for himself all that he has been able to ascertain. His General will in most cases make up his mind how to act from such reports. It is therefore of far more importance to ascertain the most advantageous position, than to describe, however perfectly and minutely, others offering minor advantages.

An officer of the General Staff seldom makes a reconnaissance alone in war. He is generally accompanied by a detachment of Cavalry to protect him against small parties of the enemy, to drive in the enemy's vedettes and to carry information rapidly. In addition to an escort of this description, it is often advisable, as several pairs of eyes are better than one, to give him the assistance of one or two well mounted officers who have previously been thoroughly made acquainted with the object of the reconnaissance. By then dividing the ground to be examined among the party, a considerable saving may be effected in the time available for gaining the information desired. Again, especially in a thick or intersected country, a better and more accurate idea can be obtained of the circumstances connected with some given point to be reconnoitred, when it can be simultaneously observed from different directions. It rests with the General Staff officer on such occasions to give suitable directions to his assistants.

When any special technical knowledge is necessary, it is desirable to have the assistance of Artillery, and especially of Engineer, officers. In the attack and defence of fortresses, their co-operation is, of course, of the highest importance. But even during active operations in the field, circumstances often arise when, though the General Staff officer must have sufficient training to prevent his making any mistakes, it is necessary to have the question technically examined with the greatest care by officers of the special arms.

In a case of this description the object in view is generally of such importance that it is desirable to entrust the reconnaissance to the management of a General Staff officer of high rank. Officers belonging to the special arms accompanying the reconnaissance should, under these circumstances, be chosen so that they are junior in rank to the General Staff officer, thus giving the latter sole direction and charge of the business. Otherwise technical details might quite possibly be allowed to carry undue weight.

In peace time in one's own country reconnaissances are best made on horseback, accompanied by a mounted servant. The latter can then hold the officer's horse when he dismounts to make notes or corrections on the map. Writing or sketching on horseback is a difficult matter, even on the quietest of animals. Occasionally country may be reconnoitred in a carriage, and this plan would be adopted in the case of a foreign country, so as not to attract attention. Under such circumstances anything which distinguishes the reconnoitring officer from an ordinary traveller should be avoided. At home a pocket compass, a sketching case with coloured pencils, some squared and tracing paper, and a notebook would be carried, but abroad as much as possible should be entrusted to memory, and only committed to paper afterwards when in one's own room.

B. HINTS ON RECONNAISSANCE.

A high standard of general military information is the most valuable outfit in making reconnaissances. Frederick the Great

required a higher standard in this respect from his Cavalry officers than from his Infantry officers of corresponding rank. It would therefore only be in keeping with the spirit which is still so conspicuous in the Cavalry of the Prussian Army, of founding everything connected with its organisation and training on the doctrines of the Great King, if the latter's warnings and demands received the same consideration at the present day in regard to this as they do in other matters.

It may be doubted whether Cavalry will ever again play the brilliant and decisive *rôle* in actual battle which distinguished it during the Silesian Wars. But, on the other hand, there can be no doubt whatever that in reconnaissance and scouting work, Cavalry can and must be able to be of the same service as in former days. It is evident, moreover, that the importance of this branch of its duties, which facilitates and renders possible the manœuvring of Armies, has increased with the size of modern armaments.

This duty should not, however, be regarded as limited to the mere observation of the enemy's forces. A thorough knowledge of the nature of the country which may have to be traversed on the following day by our own troops can be obtained at the same time as any intelligence of the appearance and movements of the enemy, and is often of equal or even of greater importance.

The many enterprising Cavalry officers who act as "the eyes of the General," and seek to keep the closest "touch" with the enemy, should therefore endeavour not only to procure intelligence of the enemy, as the result of their excursions, but to bring in reports on the country they have ridden through. As regards these officers, it should not be necessary to point out every day to each individual the particular objects to which he should pay attention. They should know instinctively, as the natural result of their own military judgment, the points on which it is desirable to obtain information both as regards the enemy and the country.

The power of forming an opinion from extended observa-

tions may be given by Nature to a few specially gifted individuals, but the majority can only acquire the desired faculty by constant study and practice. The less inclination young Cavalry officers, who may perhaps be quartered in stations where there are few inducements to study, have for work of a scientific nature, the more necessary it is that they should receive special training.

Every squadron leader can impart the first and most essential instruction to his young officers by extensive excursions undertaken in the country round the garrison in which they are quartered. We would next recommend practice in reconnaissance and scouting duties, lasting for several days together, made under the supposition of some given military situation, and systematically carried out by the greater portion of the officers of a regiment together, under the direction of the Officer Commanding the regiment or the second in command. Next should come Cavalry and General Staff rides.

Officers would thus gain confidence in themselves in noting anything in the country that would be of importance on service. They get accustomed to observe the country as well as the enemy, to note what is necessary, and draw attention to it in their reports. In this the following are of special importance:—Roads and communications; character of rivers and water-courses, woods, hills and mountains, especially as affecting the movements of troops off the roads; places that appear favourable for bivouacking either for large or small forces (not forgetting the question of water supply, which is an important consideration); positions which might with advantage be held by lines of outposts either to observe the movements of the enemy or cover certain points.

An officer who, when riding over a tract of country, has looked about him, keeping such points as these in view, can afterwards be usefully employed as guide to a column of troops. The reports of such officers taken collectively furnish, when they contain information both as regards the enemy and the country that has been reconnoitred, information which is doubly

valuable to those in high authority who have to issue orders for operations.

It must be presumed, however, that the reports in question are the result of professional judgment. The latter must include, in addition to the knowledge that is specially necessary, a certain acquaintance with the military situation at the moment. A Cavalry officer sent to reconnoitre in the face of the enemy is actually performing the duties of an officer of the General Staff. He should consequently be trained for this branch of a General Staff officer's duties, if possible by the theoretical study of military science, but at any rate by numerous practical exercises on horseback.*

It is, of course, unnecessary to point out that the reconnaissance of certain very important points, as well as a general reconnaissance embracing large tracts of country, require military judgment of a sounder nature and previous study of a more thorough description. In the latter case, the most accurate knowledge of the country to be examined that can be acquired beforehand from materials already in our possession or within our reach, is of especial value. We are then at least sufficiently informed at the outset not to lose time in learning what is already known. New information is what is required, or at any rate, old information corrected and enlarged up to date. The military history of a country is of great value in giving hints as to the course to be pursued. Many conditions of making war remain constant in spite of great changes in the military art. In this respect the past serves as a guide both to the present and to the future.

Good maps are another great source of assistance. We can never take too much trouble in endeavouring to procure the best maps. Booksellers' shops often contain maps made for local purposes, which, though not military maps, may furnish much useful information. It need scarcely be said that they should invariably be compared with the ground, and, if necessary, corrected.

* This, of course, equally applies to the Mounted Officers of other arms.

Thus in the use of maps, as well as in giving an accurate representation of the ground at certain points in a reconnaissance, some proficiency in the art of sketching ground is indispensable. It forms, in fact, an important subject of military education.

Finally, among the aids for carrying out a reconnaissance, the natural gifts of eye for country and power of judging distances must be reckoned.

The former is an instinct with which all men are not equally endowed, but which it is quite possible to improve by practice.

Every General Staff officer must, however, be able, under any circumstances, to find his way about a country with the assistance of a map and a pocket compass. Generally the use of the latter may be dispensed with by following up the same road, or if necessary, by observing the position of the sun by day, or that of the pole star on a clear night. On a dark night a compass marked with luminous paint may be of service if a pocket electric lamp is not available.

Judging distances by eye can be considerably improved by practice. Until a reliable, light, handy and portable range-finder is invented, every individual must have some plan of his own of estimating distances, whether it be by judging by eye, pacing on foot, or cantering on horseback. Pacing on foot is the most accurate though the slowest method. The most rapid but most inaccurate method is judging distances by eye. Many attempts have been made to give rules for this method, but in addition to the sight of each individual, the nature of the country (whether, for instance, it is mountainous, or there are broad expanses of water), as well as the state of the weather and light, have to be considered.

Attempts have also been made to utilise the velocity of sound (about 1,180 feet per second) for measuring distances, by timing the interval between seeing the flash and hearing the report of a gun. The theory is sound enough, but the errors of observation are so great that the method is only applicable to very long distances, for, the errors of

observation remaining the same, the total error diminishes as the distance increases.

Finally, it is necessary when making reconnaissances in foreign countries to have a table of foreign measures by which distances expressed in foreign measurements may be compared with our own.

The following table gives the equivalents in the metric system* :—

	English Miles.	Kilom.†
English mile	1.0	1.61
Belgian league (lieue de poste à 4,000 toises) ..	4.84	7.70
Danish mile	4.68	7.53
German mile	4.67	7.50
French lieue commune	2.75	4.44
„ lieue de poste à 2,000 toises	2.42	3.9
Geographical mile, 15 to the degree of long. at the Equator	4.60	7.42
Italian mile	1.15	1.85
Dutch Uur	3.45	5.53
Austrian mile of 4,000 Vienna fathoms of 6 Vienna feet	4.71	7.59
Portuguese legua	3.83	6.18
Russian verst of 1,500 arshines	0.664	1.07
Swedish mile of 36,000 Swedish feet	6.07	10.09
Swiss hour of 16,000 Swiss feet	2.98	4.80
Nautical mile	1.15	1.85

C. SKETCHES.

The object of military sketching is to give a clear description of a piece of ground by means of a rapid sketch. The short space of time usually available for such purposes renders the use of the simplest means necessary. A sketch should never on any account be too finely drawn. It should be easily read by the light of the bivouac fire.

* And in English statute miles. With the exception of Great Britain and Russia the metric system has been universally introduced in European countries. In Austria, Sweden and Norway it is compulsory. Still in Spain, Portugal, Greece, Turkey and the Balkan Peninsula distances off the railways are only reckoned in hours, these varying with the class of road and character of the country.—(Ta.)

† For practical purposes 8 kilometres may be taken as 5 English miles.—(Ta.)

A sketch of this kind is generally used to illustrate a report, or may be required instead of a report. In the case of the reconnaissance of a large extent of country, sketches are rarely necessary, and only then as a means of correcting or explaining certain points on existing maps. In making a reconnaissance, moreover, the General Staff officer would nowadays almost invariably be in possession of a map from which the leading features of the ground might be previously copied and converted to the scale of the sketch, so as to act as a general check on any very great errors in the latter.

The question has often been raised, especially with reference to experience gained in recent wars, whether sketching is still necessary and should consequently continue to form a subject of instruction in peace. There is no doubt that sketches have only rarely been made during active operations. In most cases when reconnaissances have suddenly had to be made, there has been no time to transfer to paper, in the form of a sketch, the impressions gained. The officer making the reconnaissance generally returned as quickly as he could to the spot whence he was sent, and, with the map in his hand, reported at once to his superiors the results of his investigations.

But it may well be asked whether reconnaissances would have been as rapidly and satisfactorily carried out had officers not been trained during times of peace in surveying and sketching, and thus acquired the habit of rapidly grasping in their minds the important topographical features in a tract of country. An officer, thus trained, when making a reconnaissance, forms a sketch of the ground in his mind without expressing his thoughts on paper. Drawings, however, are often very necessary in war, if only for the purpose of describing and illustrating at some future period the history of battles by sketches of the ground on which they have been fought.

We are consequently perfectly right in keeping up training in sketching with simple materials in peace time, and in not dispensing too much with requirements of clearness and accuracy. Men possessing the greatest natural talent, and not those who

are least adapted for this kind of work, set the standard which should be aimed at. But many a General Staff officer may fall short of this without prejudice to his actual value.

Sketches are, as a rule, made on the scale of $\frac{1}{25000}$ (2·5344 inches to the mile). Sketches of specially important points may be made on the scale of $\frac{1}{12500}$ (5·0688 inches to the mile), and sketches of large extents of country on the scale of $\frac{1}{5000}$ (1·2672 inches to the mile) or on a still smaller scale. In sketches of roads, as well as of rivers, streams and valleys, the ground on either side should be shown to a distance of from 550 to 1,100 yards. If heights run parallel to a road, the watershed, if it is within effective Artillery range (about 4,500 yards), should be included. The same rule applies as regards showing the hills bordering the valley when sketching a stream.

Troops would only be marked on a sketch made to supplement a report on an engagement, or describe a position, care being taken to draw them as far as possible to scale. The conventional signs used by the General Staff should be adhered to. One side should be shown in red and the other in blue. It should be stated on the margin of a sketch whither roads leaving it lead.* A sketch should always have a scale drawn on it, showing at least 2 kilometres ($1\frac{1}{2}$ miles), and graduated in hundreds of metres so that distances can be measured from it with a pair of compasses. A sketch should almost invariably be made facing the true north. In the case of road sketches, however, it is advisable to depart from this rule and to make the general direction of the road sketched run from the bottom to the top of the paper. The sketch can then be more easily carried in the hand and compared with the ground when on the march.

Sketches may be either black or coloured. In the latter case coloured pencils are very useful and handy. The style of drawing is best taken from the sheets of the survey. The writing need not necessarily be very beautiful, but it should on no account be indistinct. It is often desirable, especially in

* The usual plan with us is to state whence the roads come on the left of the sketch, and whither they lead on the right.—(Tr.)

the case when a sketch is to take the place of a written report, to give written information on the sketch itself (or on the margin), on points which are not clear from the sketch, but which are nevertheless of importance, such as the depth and breadth of watercourses, thickness of woods, breadth and quality of roads, and character of ground.

Finally, a sketch should be dated and signed by the officer making it.

D. EXPRESSIONS USED IN RECONNAISSANCE REPORTS.

It is very important that the same forms and expressions should be used throughout the Army in making reports. In Germany, as in most countries, the language varies very considerably in different parts of the country, giving rise to so-called provincial expressions.

These should be altogether avoided, or at any rate explained by expressions universally understood. Mistakes are not likely to occur if we only make use of words which belong to the German language *as written* (including foreign words which have been Germanised*), seeing that provincial expressions really occur only in the language *as spoken*. There are also certain words which may have different meanings, according to the character of the country in which they are used. For instance, in a flat country an elevation in the ground would be styled a *mountain*, which in a mountainous country would hardly be considered worthy of the name of a *hill*; similarly, the terms *steep*, *flat*, or *wild*, have relative meanings. Again, there is a tendency to the bad habit of unnecessarily using foreign expressions, the exact meaning of which is not clearly understood. But besides this, inaccuracy of expression is sometimes met with in military reports, which gives rise to doubts as to what is actually meant.

* The German language has borrowed enormously in this respect from the French.—(Tr.)

The above reasons, then, fully justify us in attempting to arrive at some uniformity of language (more especially in connection with the reconnaissance of ground). The following are some of the expressions most used, together with their definitions :—

“Unenclosed country.”—This means ground which is free from obstacles of any kind (hedges, ditches, &c.), and offers no hindrance to the movements of troops in any formation or in any direction. “Enclosed country” means the reverse of the above.

“Open country” means ground over which the view is unrestricted. “Broken country” would be the reverse of this.

“Passable country” means ground which, from the character of its surface, offers no obstacle to the passage of troops. “Impassable country” means the reverse of this.

It is evident that these expressions have not only an absolute meaning, but also a relative one when applied exclusively to the different arms.

“Level ground,” in a mathematical sense, does not exist. The expression, however, is used to describe ground in which there appears to the eye to be no perceptible rise or fall, which permits of the unrestricted action of the three arms, but which does not admit of the formation or movement of troops under cover.

“Hilly ground” means an undulating country or a locality where level country merges into a mountainous one. The elevations in ground of this description are slight, both as regards height and steepness of slope, and do not affect to any great extent the movements of troops, but at the same time they enable troops to be formed up and moved under cover. Limits are imposed on the action of the three arms, but by a suitable choice of elevated points a greater field of fire may generally be obtained.

“Mountainous country” affects the movements and action of troops to a very great extent by high elevations, steep slopes and the rugged character of the surface, and very often confines

troops to the roads. There is also great difficulty in quartering and feeding troops on the country, and in very high mountains (over 10,000 feet) this would be only possible in the case of small detachments. Large bodies of troops would have to depend almost entirely on supplies brought from a distance.

Topographical features may be divided into natural and artificial. By the former are understood the surface of the ground and its natural features without artificial modification. The latter include all artificial modifications necessary to satisfy the requirements of man.

As regards the former, there is first of all the surface of the ground with its elevations and depressions, such as the following:—

A “hill,” an isolated elevation of the ground, not of great height.

“Heights,” or “ridge,” a more extended elevation, not of great height.

A “mountain,” an isolated elevation of considerable height above the surrounding country.

A “plateau,” an extensive elevation of the ground, having a summit with a nearly flat surface.

In reconnaissance reports it is desirable that either absolute or relative altitudes should be given, that is to say, in the latter case the altitudes above some *datum* level.

Depressions in the ground are the reverse of elevations, and may be classed as “depressions,” “basins,” “gorges,” “ravines” or “valleys.” They should be specially described both as regards their dimensions and steepness of slope.

As regards the character of the surface of the ground, it is usually described as having a subsoil of rock, clay, loam, or sand. This is generally covered with a layer of mould of variable thickness, on which there is vegetation. Ground is described as “rocky” when the rocks without any covering of earth or soil protrude beyond the surface, and as “stony” when the surface is covered with a layer of loose stones.

“Soft ground” is used to describe ground not having a firm

surface. Under this head come water-meadows and peat bogs, both of which are of some agricultural value as producing hay and peat respectively. They generally have dams or embankments which may be of some military importance. "Marshes" or "swamps" are to be considered as tracts of ground left in their natural state, and untouched by man for purposes of cultivation. They may generally be described as impassable tracts of "soft ground."

Slopes may be either "gentle" (up to 5°), "steep" (over 20°), or "very steep" (over 30°). Slopes are best given in degrees.

Gentle slopes offer no obstacle to the movements of troops. A slope of 10° has a considerable effect on the movements of Infantry in close formation. Cavalry cannot charge down hill, and only with difficulty up hill. Artillery can only move up hill with difficulty, and the drag-shoe or brake has to be applied going down hill. At a slope of 20° the ordered movements of mounted troops cease, except for single horsemen. Slopes of 30° may be considered as impassable for Infantry in close formation. On steeper slopes, *i.e.*, up to 45° , single men can only climb with difficulty.

"Water," as belonging to the natural features of a country, is very important from a military point of view.

Water may be either "running" or "still." Running water may be classed according to the size and importance of the stream, as "river," "stream," or "brook." Still water may be classed as "sea," "bay," "lake," "pond," or "pool": and parts of the sea as "gulf," "bay," "harbour," or "roadstead."

Among the artificial features of a country, land communications are of great importance, especially railways, with which may be classed "light railways."

Next come roads. These may be classed as follows:—Main roads are those which are scientifically laid out, systematically kept in repair, and either macadamised, made of loam, or paved. Country roads are those joining villages, without reference to their quality. Tracks are those which merely provide for cart traffic between farms, houses, or hamlets. The expressions "field

track," "wood track" and "meadow track" speak for themselves as regards the use for which they are respectively intended, and indicate that they do not, at any rate directly, connect houses, farms or hamlets. Finally there is the footpath.*

An embankment is also sometimes used as a means of communication, being raised above the surrounding land and having a level surface. In low-lying districts a construction of this kind is often intended to arrest floods caused by the rising of a river in the vicinity. It is then called a "dam" or "embankment."

A "hollow road" is a road the level of which is sunk below that of the adjoining ground.

A "pass" may be considered as a road leading over a chain of mountains and connecting the country on either side of such chain.

A "defile" means the contraction or narrowing of passable ground, such as, for instance, a road over a chain of mountains, along a dam or embankment with wet and impassable ground on either side, or over a bridge.

Among water communications may here be mentioned canals and dykes which are navigable either by ships or boats.

Ditches are often made in low-lying land to drain the surrounding country, and gradually run dry during certain seasons of the year; ditches may therefore be either always wet or dry, or sometimes wet and sometimes dry according to the state of the country, and should be described accordingly.

Rivers, streams and ditches may be crossed by bridges, ferries or fords.

The first-named may be classed as permanent or floating, according to their construction.

Ferries vary according to their capacity and method of transit from one bank to the other.

Land may be classed as park, garden, meadow, plough, grazing or uncultivated land, and as woods or forests.

Woods which have been regularly planted and laid out are called in Germany "*Forste*."

* In mountainous countries there are also tracks or paths that are used by pack mules or horses.

Dwelling-places may be classed as large towns, small towns, villages, hamlets, farms or single houses. Large houses of very solid construction, or of architectural interest, are usually called country-houses or castles (Ger. "*Schloss*," Fr. "*Château*").

Fortifications may be classed according to the size and particular object of the work, as "battery" (intended for guns only) "field work" (intended chiefly for Infantry), "fort" (a closed permanent work of small dimensions), "fortress" (a permanently fortified town), and "first-class fortress" (a fortified place of great size, strength and importance) (Ger. "*Waffenplatz*"). The general principles as to the form a report should take are given in F.S. Regs. 58-74 and 106-118.

E. RECONNAISSANCE OF WATER.

1. GENERAL OBSERVATIONS.

Water plays an important part in the operations of war. As an *appui* to a flank or as an obstacle in front it assists the defensive and obstructs the offensive. Water is also of use as means of communication, and may thus serve both the offensive and the defensive.

a. Running Water.

1. Rivers.

- a. Length of the portion of the river to be reconnoitred, general direction and any very great deviations therefrom.
- b. Breadth, viz., the average breadth, and that at passages over the river and at towns or villages of importance. When the banks of a river are high, the breadth varies very slightly for considerable distances.
- c. Depth in deepest places in the stream, average depth, as well as the depth at points of special importance (as mentioned under *b*).
- d. Banks, height above mean level of the river, slope and peculiar character, embankments or artificial banks.
- e. Bed and character of the bottom, whether rocky, stony, sandy, gravel or mud. Periodical changes in the bed.
- f. Islands, including nature of cultivation on them and whether passable.

- g.* Fall, and rapidity of the current per second. The fall is "slight" if the rapidity of the current is from 0.3 to 0.7 metre (11.811 to 27.56 inches), "moderate" if from 0.7 to 1 metre (2.2966 to 3.280 feet), "rapid" if from 1 to 2 metres (3.280 to 6.560 feet), and "very rapid" if 3 or more metres (9.840 feet or more) per second.
- h.* Whether navigable for vessels or rafts, together with information on the water-faring population, vessels, boats and ferries, especially steamers, and purposes for which used. Any alteration in the volume of water according to the time of year should be noted and given.
- i.* Artificial arrangements, such as locks, sluices, dams or weirs, giving their position and construction, and the effect they have on regulating the volume of water in the river.
- k.* Affluents should, if necessary, be similarly described.

2. *The valley of a river.*

- a.* Depression and extent, whether passable or crossed by roads; cultivation; towns and villages, especially those situated on the banks of the river; backwaters, creeks, marshy places, elevations of the ground, dams, embankments and ditches should be specially noted.
- b.* Sides of the valley, distance from the river and from each other, relative heights, nature of the ground, whether steep or passable; roads and cultivation.

3. *Passages of rivers.*

a. Bridges.

α. Permanent bridges. Material (wood, stone, brick or iron); construction (on piles, arches or girders); length, breadth and height of roadway above mean water level; whether any part can be temporarily drawn up or removed; weight the bridge can support, and whether passable for the different arms; approaches on either bank; whether easily destroyed and restored.

β. Floating bridges. Whether made of boats or rafts,

stating size, construction, weight the bridge is capable of supporting, the number of boats of which the bridge is formed, and the time taken in opening and closing the bridge.

- b. Ferries and flying bridges. Weight the ferry or bridge can support, giving the time taken in crossing, together with the number of men, horses and guns that could be taken over at a trip.
- c. Fords. Position, direction, depth, bottom. A ford 1 metre (3.28 feet) deep is passable by Infantry, $1\frac{1}{2}$ metres (4.71 feet) deep by Cavalry, and $\frac{3}{4}$ metre (2.852 feet) deep by Artillery.
- d. Favourable positions for the construction of military bridges. Approaches on either bank, facilities for bridging, and whether assistance could be obtained on the spot in the way of bridging materials, workmen or transport.
- e. In winter the possibility of crossing when the river is frozen must be considered.

Places on the river where both the technical and tactical conditions for the construction of bridges in the face of the enemy are favourable should be shown on the map by an arrow drawn across the river, pointing towards the bank to which the crossing is to be made. Places suitable for the construction of bridges when the river has to be crossed in retreat, and when followed up by the enemy, should be similarly indicated. A place which is favourable for the passage of a river from the right to the left bank when taking the offensive may often be just as suitable for re-crossing from the left to the right bank when in retreat or *vice versa*.

b. Still Water.

1. Lakes.

Length, breadth, depth and nature of the shore. Narrow arms or creeks of a lake should be treated as rivers.

2. Straits and mouths of rivers.

Breadth, depth, harbour works (specially noting any harbour

or coast defences, and the possibility of obstructing the entrance or passage), shipping, docks, dockyards, or commercial depôts.

3. *Gulfs and portions of the sea.*

Under this heading not only the coast itself but the land near the coast, together with the nature of the shore, especially as regards the approach of an enemy's fleet, should be reported on.

- a. Character and nature of the coast to be treated similarly to the banks of a river. Landing places. In describing a harbour the wind which is favourable either for entering or leaving it should be mentioned, as well as the amount of shelter afforded by the conformation of the coast to ships lying at anchor either in a roadstead or bay. Constructions or arrangements for protecting the coast against the encroachments of the sea. Works of defence against the attacks of an enemy. Arrangements for facilitating navigation and meeting the wants of shipping, such as pilot and lifeboat stations, lighthouses, and stores for provisioning and fitting out vessels.
- b. Description of the beach to be treated similarly to the bed of a river. Depth of water and rise and fall of tide, giving the times taken in ebbing and flowing and the time of high and low water. Character of the bottom as holding ground for anchorages. Breadth and depth of navigable water, giving position and distance from the coast.
- c. Defensive properties of the coast, specifying points which seem suitable for the erection of coast batteries and other defences against the probable approach of an enemy's ships of war. Projects for obstructing navigation, for torpedo defence, for positions of despatch vessels, for the disposition and use of the troops which would be available, and for the establishment of a system of signals.

It is evident that all the above considerations, which really belong to the subject of coast defence, could not well be gone

into without the co-operation of the Navy. Moreover, it should be remembered that, if the fleet were sufficiently strong, it would form the first line of defence of a coast. Consequently a reconnaissance of a coast for purposes of defence should be carried out conjointly by the Navy and the Coast Artillery.

The co-operation of the Land Forces, *i.e.*, of the General Staff, would only be necessary in the case of the enemy's fleet being greatly superior in strength, and there being imminent danger of landings taking place on a large scale. These would then have to be met by the assembly of considerable forces. A knowledge of the points favourable for landing on the coast, a reliable system of transmitting intelligence, and a system of railways facilitating the rapid concentration of troops on the threatened points, would then be the principal questions which would have to be considered.

2. RECONNAISSANCE OF A RIVER CROSSING.

If a river has to be crossed when advancing, the selection of the point of passage is a *tactical* question if any serious resistance be contemplated on the part of the enemy. A well-marked re-entering bend of the river, high banks on our side commanding the ground on the opposite side, secure means of approaching and taking up positions on our side, and *points d'appui* on the opposite side where the troops first crossing could establish themselves so as to act as a bridge head to the others that would follow are matters of the greatest importance.

From a *technical* point of view there are other considerations, such as the breadth, depth, nature of banks, stream, bottom and such like properties of the river. And again, under this heading would come the question of a sufficient military bridging train, and the possibility of locally supplementing the same, if deficient, by material found in the neighbourhood.

These are circumstances which would have to be considered under the supposition that the military situation necessitates

the river being crossed within a certain section of its course. Naturally the choice of the section is a *strategical* question, depending on the military situation at the time, and the general features of the country. Within the limits thus imposed the conditions fulfilling tactical and technical requirements must be ascertained by a reconnaissance.

If the conditions are perfectly clear in character, the requirements of the point chosen for crossing must be separately considered, and then adjusted, for it would be rarely found that any point equally fulfilled all the conditions desired.

If a point for crossing a river were being sought for in an unknown country, the most natural method of procedure would be first to examine the river at places where it is crossed either by permanent or floating bridges, flying bridges or ferries. There is always one favourable condition to be found at such places, viz., roads leading to the bank on either side, and in many cases other advantages of a technical character as well. But from a *tactical* point of view such places might be totally unsuitable. If, then, the place where there is a bridge, ferry, or ford be objectionable for this reason, some point which fulfils tactical conditions must be sought for as near the place as possible, to avoid all unnecessary marching across country. In every case the question of being able to march to and from the river banks should never be lost sight of, nor the fact that approaches to a river are often seriously affected by changes of weather.

Conditions which are in themselves tactically unfavourable, may sometimes be compensated for by skilful arrangements, as well as by a superiority of fire. If the country situated near the point of crossing were impassable for any distance either by reason of its being rocky or marshy, regular approaches would have to be made, requiring much time for their construction. The chances of success in effecting a passage of the river, in the face of an enterprising enemy, would then be small indeed, as he would be given ample time to concentrate all his available forces on the point threatened.

The above considerations lead us at once to the importance of a river as an obstacle covering the enemy's front. To cross a river by throwing a bridge over it, under fire, is certainly one of the most desperate undertakings that a General could be called upon to execute. The difficulties placed in the way of crossing, either by the enemy or by Nature, might indeed be insurmountable. The slightest *contretemps* might suffice to defeat the undertaking, even if we suppose the bridge to have been thrown without a check, and before the enemy had time to bring any considerable force to bear on the point of crossing.

For instance, to force the passage of a river, when the opposite bank is not completely commanded and swept by the fire from our side, and the enemy is assembled for battle, is almost a matter of impossibility. Consequently when there is reason to believe that strong forces of the enemy would be rapidly assembled to resist the passage of a river at a certain point, some other place must be chosen and the river crossed there, before the enemy has time to discover and resist the attempt.

The difficulty of reconnoitring a river is, in nearly every case, increased by the fact that the enemy's advanced posts prevent access to the opposite bank. It is then far from easy to come to a correct conclusion as to the possibility of firmly establishing on the opposite bank the first troops that are to cross, or to form any idea as to how, if the river be successfully crossed in force, operations are to be continued with the best prospect of success.

Information obtained from persons well acquainted with the country, a careful examination of all available maps, and a comparison of the latter with the topographical features of the neighbourhood, so as to ascertain how far they can be depended on, may all contribute towards arriving at an approximately correct conclusion.

The following points should always be made the subject of careful examination and report :—

- a. Places where bridges may be constructed and the river crossed, or which offer exceptional advantages for the undertaking.

Reasons given for preferring any particular point or points.

- b. Breadth, depth and force of current, with special reference to any sudden increase in the volume of water (or floods) to which the river may be liable.
- c. Character of the banks and bed.
- d. Any existing means of assisting the operation of bridging, such as boats, ferries, timber, ropes, or anchors. Proposals or projects that may be devised for re-establishing any arrangements for crossing which may have existed, but have been destroyed by the enemy.
- e. Roads and communications leading to the bank of the river on either side. Places suitable for collecting stores.
- f. Positions for Artillery on this side, with the relative commands of the opposite sides of the valley, the breadth of the valley, whether wooded, enclosed, or cultivated.
- g. Whether the point chosen for bridging the river is likely to be exposed to the fire of the enemy's Artillery.
- h. Towns, villages, and farms, and whether the character of the country on the opposite bank is favourable or otherwise to the first troops thrown across.
- i. Fords; these are more likely to be of use if below the point chosen for bridging the river.

2. If a river is to be crossed in the course of a retirement, the first consideration is existing bridges, or bridges which have been destroyed and repaired, for the retreat of the main body. The examination of such bridges, which should on no account be delayed, would be made chiefly with a view to ascertain whether they were safe and strong enough to support the necessary weight. If considered desirable, repairs should be undertaken without delay, and the bridges made of the requisite strength. The technical report would, as a rule, be made by an Engineer officer, and would have reference to such matters only

If the rear guard be closely pressed by the enemy, as will generally be the case, the possibility of having to retire over the river under the fire of the pursuers must be considered. Tactical considerations would then have most weight. The same remarks may be said to apply generally in this case as in that of an advance, circumstances which may be considered favourable or otherwise in one case being equally so in the other. But in a retreat, opportunities are often offered of improving any advantages the features of the country may offer by hasty entrenchments and field fortification. These may either take the form of gun emplacements on the farther bank, commanding the ground on the near bank and checking the enemy's advance, or works thrown up on the near bank covering and protecting the bridge to the last moment.

Finally, there is the danger that a portion of the main body, or, at any rate, the rear guard, which is often obliged to maintain itself against the enemy longer than is desirable, may possibly be cut off by the enemy from the point of crossing. The enemy would usually do his utmost to accomplish this, and his movements would generally indicate from which side the pressure might be expected. If his design be foreseen and a bridge thrown at some other point to enable the rear guard to retire with safety, the latter may continue to hold out and may allow the enemy to complete his turning movement, thus drawing him off from the point where the main body was crossing. But in choosing such a point, care must be taken that there may be every prospect of accomplishing the retreat with slight loss and every chance of saving the bridging material. To ensure this, recourse must be had to field fortification to strengthen and add to such tactical advantages of a general character as are offered by the point in question.

Reconnaissances made with a view to the selection of the different points referred to can, as a rule, be carried out without any particular difficulty, as both banks of the river may be examined without fear of the enemy.

3. If holding a river line against an enemy who may be expected to attempt a crossing, it is well to put oneself in the position of the enemy, and, having selected his best points of crossing, see how the attempt may be best foiled. The report of the reconnaissance, which should be treated as far as possible as a broad question, must in this case be accompanied by proposals for the *observation* and *defence* of the line formed by the river.

The proper *observation* of a line of river requires above all things a good system of transmitting intelligence, and this again requires efficient outpost arrangements. Small detachments posted on the opposite bank must hold out as long as they are able, send all information they can get on what appears to be the line of advance of the enemy's main force, and only retire across the river when hard pushed, and then at some point where the passage has been made secure. An efficient and well-organised system of acquiring information supplements and completes the reports made by the detachments which have been driven over the river. The plans of the enemy may often be discovered by observing what particular points he has been reconnoitring.

The posts of observation stationed on the near side of the river should be instructed not to interfere with or fire on officer's parties of the enemy reconnoitring on the opposite bank, unless these come very near and they are sure of their mark. It is far better to watch carefully the enemy's intentions than momentarily to interrupt his observations.

Means of rapidly sending information should be provided by the telegraph, telephone, or by a system of mounted relays. At all important points or places where the enemy would be likely to attempt a passage or make a feint, intelligent officers should be posted who may be safely trusted to distinguish feigned from real attempts.

The *defence* is materially assisted by the removal or destruction of everything which could be of use to the enemy in attempting a passage, such as boats, ferries and timber. Whether

it is better simply to remove these to some safe place on the near side of the river, or to burn or destroy them, is a question depending on the possibility or probability of our shortly assuming the offensive. Similar considerations must also decide whether railway and other bridges and fords are to be destroyed or defended intact. Preparations made for blowing up and destroying bridges should be constantly examined and ascertained to be effective. Finally, a judicious and skilful distribution of the forces available, so that they may be concentrated on the most probable points of passage in the shortest possible time, is, it is unnecessary to add, of the first and highest importance.

It is only by making the most careful reconnaissances that sufficient information can be obtained on which all the above considerations and questions could, at any rate so far as local arrangements are necessary, be decided. The strategical conditions, i.e., the extent of river to be observed and defended (and consequently examined and reconnoitred), are in this case, as in the case of a contemplated offensive movement across a river, dependent on the general military situation. The line of river to be observed would be divided into sections or lengths, and assigned to different officers for separate examination and report.

As the intentions of the enemy cannot be accurately known, the reconnaissance on our part must in this case be far more extensive than on his, from the very fact that he has a definite object in view, and consequently has, from the first, a much less extensive field to contemplate. As we have to await the enemy's advance and do not know where he will be met, we must have an even fuller knowledge of the country than he has. The difference between the *active* and *passive* is perhaps nowhere better shown or illustrated than in the case of the attack and defence of a line of river. The latter, while apparently affording the defenders a long and formidable line of defence, at the same time enables the assailant to mass his forces suddenly on a given point. Thus the danger, when acting on the defensive, of

scattering an Army too widely, is in this case more than usually serious. It may to a great extent be guarded against by efficient and careful reconnoitring. The look-out must be sharp and the observation correct, but the aim and object always kept in view must be to ascertain the intentions of the enemy.

F. RECONNAISSANCE OF ROADS.

1. GENERAL OBSERVATIONS.

Numerous roads covering a country are in every way favourable to the operations of war.

Roads may be classed according to their origin and condition. Thus they may be described as roads which have been scientifically laid out, roads which have been improved from old tracks, and roads which have been casually formed.

To the first belong the great paved *chaussées* of the Continent, macadamised, loam, or gravelled highways, and wooden (*corduroy*) roads.

Roads casually formed are merely tracks which have arisen from use and are left to take care of themselves. This class of road is rapidly disappearing with increased civilisation, as in most countries of Central Europe towns parishes and communes are bound by law to improve and maintain the country roads in their vicinity. The extent to which this is enforced varies of course very much. Moreover, in many countries, owing to the nature of the soil, it is impossible to expect roads to be kept in a state of repair in all weathers, unless they are properly constructed according to the rules of road-making. On the other hand, sandy roads can be kept in a tolerably good state of repair by being frequently coated with loam, and when roads have a firm foundation (as in mountainous districts) the metalling has merely to be constantly renewed. Roads of this description may be classed as roads improved from tracks.

The importance of the various roads of a country for national and commercial purposes has led to roads being divided into main

roads and country roads, and to a share of the expense of keeping them in repair being borne by the State. The system upon which roads are constructed and repaired in different countries varies of course very much, but a knowledge of the system observed in the country concerned is of great assistance in making a reconnaissance of its roads.*

In the reconnaissance of a road it is desirable to ascertain to what extent it can be used for marching, and consequently the following points should be noted :—

- a. Length and classification.
- b. Breadth, so that the front on which troops could march may be known. Any contraction or widening of the road should be carefully noted.
- c. Nature of the roadway, specifying—
 - α. The materials of which the roadway is constructed, effect of weather on the road, and whether the road could be improved, giving the materials necessary, and stating if they are to be found in the neighbourhood.
 - β. Inclines on the road, giving the gradient, and stating whether any very difficult parts of the road could be turned or avoided by using other roads.
- d. Defiles, including all bridges, giving materials of construction, length, breadth, weight the bridge is capable of supporting, and description of the obstacle which the bridge crosses.
- e. Country on either side of the road, whether troops could march parallel to it and deploy off it to either flank, especially noting whether the ground is wooded or cut up with trees, hedges or ditches. Towns or villages through which the road passes, other roads crossing or joining the road. Positions favourable for defence, for outposts, or for holding with a rear guard.

* In France roads are classified according to the authorities who make and repair them, and are styled *route nationale*, *route départementale*, *route communale* and *route vicinale*.—(Tr.)

Where there are any obstacles on a road, the means of overcoming them should be reported on.

2. CHOICE OF ROADS. CROSS COUNTRY TRACKS.

In an advance when a close "touch" of the enemy is being maintained, the leading troops, generally Cavalry, are rarely able to make a preliminary examination of the roads to be followed. Maps and information gathered from the inhabitants have, on such occasions, to be relied on, and a more or less correct idea formed of the roads leading in the desired direction. If a road taken is found to lead in the wrong direction or becomes impracticable—the worst that could possibly occur—there would be no help for it, and we should have to retrace our steps. Such a mistake might, however, entail the most serious consequences. The punctual arrival of a column of troops at a given point, upon which much depended, might be delayed, and the fate of a battle perhaps decided thereby. It may be impossible to reverse vehicles, particularly in defiles, and the attempt may seriously block the roads.

It is, therefore, very desirable before assigning routes to forces of any size, to ascertain from the map whether and to what extent the roads by which they will have to march are practicable and lead in the desired direction. Consequently, it is best to assign to large bodies of troops such roads only as are at once seen to be good from the map. Roads which the enemy has just used in his retreat may be used by us without hesitation. If the enemy can no longer continue to retire by such roads, there would be at least the probability of coming up with him and forcing him to fight at a great disadvantage. The surest way of being kept correctly informed, during an advance, of the state of the roads it is proposed to use is to accustom the most advanced parties of Cavalry to send in daily with their reports on the movements of the enemy, a short account of the practicability of the roads they have used.

It may, however, in certain circumstances, possibly happen that a force in an advance is assigned a road which is either quite impossible or can only be used with the greatest difficulty. It does not necessarily follow, however, that the

General Staff is to blame for such mistakes. It cannot always personally reconnoitre all the roads of a country.

But in a retreat such an occurrence must never, on any account, occur, unless, of course, a force has the misfortune to be driven by the superior strength of the enemy into impracticable country. To retire before an enemy by bad roads is to incur the additional risk of being outstripped by him on good roads and cut off.

Great circumspection in this respect is necessary when using a railway as an ordinary road. In a marshy or mountainous country, or in the passage of a large river, the disadvantages of using a railroad are compensated for by the advantage of an additional line of march, or of an extra bridge; but a line of railway often practically forms, for considerable distances, a defile from which there is no escape, which cannot be used by all arms, and which by an accident, such as the breaking of an axle, might for a time be completely blocked at some inconvenient point by a wagon left on the road and impossible to remove. Consequently, a railway to be used as a road should, as a rule, be assigned only to Infantry without wheeled transport.

To think of retracing one's steps, on the road being found impassable, when retiring and followed by the enemy, is, of course, quite out of the question. The General Staff must, therefore, in this case reconnoitre with the greatest care and attention. It should be remembered there is no time in war when it is more important to preserve the greatest order and regularity in things great and small than in a retreat. Any circumstances which could possibly affect an orderly retreat—and faulty orders for the march arising from insufficient knowledge of the roads and communications of the country may certainly be considered as such—should be most carefully avoided.

Main roads do not, as a rule, require to be reconnoitred when the maps of the country have been kept up to date and are to be implicitly trusted. In a retreat the 2nd Line Transport and Trains would use these roads and precede the Army. If there were any obstacles on such roads which were not already known to exist,

they would thus be ascertained and opportunity given either to remove or avoid them, as the case might be.

The choice of roads to be used by the troops nearest the enemy is a question of the highest importance. Considerations of fighting and of marching are constantly in conflict. What appears desirable from the latter point of view must often give way to considerations of a tactical nature. Flanking detachments must often be formed, and these must sometimes move by inferior roads. Troops, again, may often be directed by roads solely with a view to resist any contemplated advance of the enemy on certain points. But all such roads must enable marches to be regularly executed, and should therefore be previously reconnoitred.

The reconnaissance of a road in such a case must go into details. The character and degree of practicability as regards its being used* by the different arms must be given, drawing attention to the following points: breadth of the road at its narrowest point, subsoil, metalling, gradients, bridges and similar defiles, if these cause the road to be still more contracted than at the narrowest parts. The country or ground on either side of the road is of special importance as regards the question of an engagement, *i.e.*, how far it is favourable, or otherwise, to the deployment of troops and to the movements and action of the different arms, and whether it offers good positions for rear guards or outposts, is favourable or otherwise to a retreat or facilitates surprises. All such matters must be considered by the General Staff officer as he rapidly rides along making the reconnaissance, and must afterwards be reported on. Similarly, the bivouacking, quartering and subsistence of troops must not be forgotten.

The question of finding cross country tracks,* by which columns of troops can march, is one of special importance, as this

* Called by the Germans a "*Kolonnenweg*," lit., "column way." It may sometimes be a road or track, but it more often means an improvised passage or line of march across country. The English reader is again reminded of the unenclosed character of Continental cultivated land.—(Tr.)

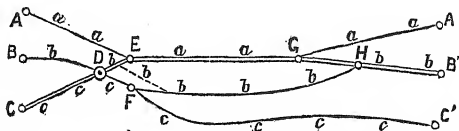
is necessary in order to make the best use of the communications of a country with a view to the combined movements of several columns.

A single column of troops moving from one point to another uses the best and shortest existing road of the country. Consequently, it is only necessary to seek and assign a special improvised road to such a column when, as rarely happens, in the absence of a good map of the country or other reliable information, there appears to be some doubt as to the right direction to be followed.

But whenever several columns of troops are marching simultaneously towards the same point each must be assigned a separate road. This often leads to a somewhat complicated combination in the use of the existing roads of the country, or even to seeking for new lines of march over ground lying off the roads, by using communications not usually intended or employed for road traffic, such as railroads. Such a proceeding is naturally to be avoided so long as a sufficient number of roads actually exist and can be turned to account. Practically, such improvised communications have only to be sought for when large masses are being concentrated or deployed into position for battle. On such occasions there are rarely too many roads available. But the more there are of them, provided there be the proper distances between them, the more rapid and effectual will the deployment be. At times it may be necessary to quit the road and march for a certain distance across country, in order that the column may escape the enemy's observation, or in some cases avoid being exposed to fire.

In a combined march of several columns it may often be impossible to allow a column to continue its march entirely by the road originally assigned to it. It may be necessary, for instance, for a column to change from one road to another, or even, in certain circumstances, to cross over from one road to another by making a short march across country, in order to arrange or maintain the combined movement on as many parallel roads as possible.

The following sketch puts the matter in a somewhat clearer light :—



If a force is to advance from the line A, B, C, to the line A', B', C', in three columns, the heads of which are to be kept as nearly as possible in alignment, the column at C, if it were ordered to march by the highway C, D, E, G, H, B', would unavoidably meet and cross the columns marching from A and B.

The column *a*, starting from A, must therefore march by E and G to reach A'; the column *c*, starting from C, must reach C' by D and F; and, finally, the column *b*, marching by D towards E, must, before reaching the latter point, turn aside, and by a previously selected track (shown by a dotted line in the sketch), reach the road F, H, and attain the point B', by H. It is, of course, taken for granted that the columns *b* and *c* could pass through the town D by two distinct roads from B to E and from C to F. If this were impossible, one of the columns would have to avoid or pass round the town by using a previously ascertained improvised road, so as to let the other pass through it.

Tracks which may be found, over and above the roads existing on the map, must be particularly distinctly shown. When there is sufficient time, or when, as in the case of the investment or siege of a fortress, the track is likely to be used for a considerable period, it should be marked with wisps of straw fastened to trees or poles, and have signposts at each end. If there be no time for such arrangements the General Staff officer selecting

the track would mark it out by posting mounted orderlies, and he should therefore, when reconnoitring for such purposes, be accompanied by a sufficient number of men. On being posted, they would at once dismount, and should be given verbal or short written instructions as to their duties.

If the track is to be used by troops at night, the orderlies should be posted closer together, and, if possible, provided with lanterns or torches. It is also always very desirable to provide guides who have been able to make themselves acquainted with the locality by day.

In selecting tracks to be used by troops when deploying or moving into position for battle, the Routine Staff or Orderly Officers of the different columns should accompany the General Staff officer to the front, see for themselves the line of march to be taken by their respective columns, and then act as guides to the latter. In such circumstances, the marking out on the ground of the different tracks would not be necessary.

The 2nd Line Transport should only be allowed to move across country in an emergency. It takes less time to attach it temporarily to the transport of some other unit moving by a good road than to march it over bad country. The orders for this must, of course, be issued by higher authority.

G. RECONNAISSANCE OF TOWNS AND VILLAGES.

Most towns and villages, and especially those of any size or importance, are situated on comparatively low-lying ground and near watercourses, from the fact that the existence of a supply of water has led to their formation. Towns and villages thus situated often contain bridges over the stream or river on which they are built, and though, as often happens, they may be commanded by the neighbouring heights and, in view of the power of modern Artillery, cannot be considered safe, they are still capable of local defence. This mainly depends on the following points:

1. How surrounded or enclosed. Whether the outskirts would offer obstacles to the movement of troops, and thus confine the attack to certain points such as entrances or exits, or would afford the defenders cover against the enemy's observation and fire.
2. The ground in the immediate neighbourhood. Whether it is open and would offer a free field of fire to the defenders, or is enclosed, and would afford the assailants cover.
3. The possibility of offering a protracted resistance in the place itself by having several lines of defence and buildings acting as *réduits*. The danger of the place being set on fire. The existence of convenient open spaces where reserves could be posted. Facilities for interior communication.
4. Opportunities for posting and moving strong reserves in covered positions behind, or on either side of, the place for a counter attack on the enemy.

The rôle that Artillery might play in attack or defence, the strength of the force required for the defence of the place itself, how it should be held and how the defence should be conducted (especially if the troops available for the defence were inadequate, in view of the size and peculiar character of the place), and, finally, the measures to be adopted to strengthen and fortify the place and the ground in its vicinity, are all questions deserving special attention.

If the reconnaissance be made merely with a view to finding quarters in the place, then the number, size and character of the houses, buildings, stables, barns and sheds are matters to be considered. Towns or large villages should be portioned off in districts; this facilitates the supervision of the work.

A somewhat similar proceeding is necessary when requisitioning a place for supplies. But whereas the accommodation afforded by a place would remain the same, unless houses and buildings had been destroyed in large numbers by fire or

similar accidents, the quantities of provisions, cloth or leather that may be found in a town or village may vary very much, and would mainly depend on whether the place had been recently subjected to military requisition. In cases of this kind, instead of a reconnaissance being made by a General Staff officer, a minute search conducted by the Commissariat, assisted in certain circumstances by the troops themselves, would have to be undertaken.*

H. RECONNAISSANCE OF WOODS.

Woods are of great importance in concealing the movements of troops from the enemy. But in very dry weather the dust arising from columns on the march often enables the enemy to detect the presence of troops, and even sometimes assists him in making a rough guess at their strength. As regards the part which woods play in fighting, it may be accepted as a general rule that a large wood intersected with numerous good roads is advantageous when situated in rear of a position, but dangerous when close in front of it, or on the flanks. In the first case a retreat, if necessary, is favoured by the wood, inasmuch as an immediate pursuit must cease at the edge of the wood, and the retreating troops on entering it are soon screened from the fire of their pursuers.

On the other hand, woods placed close in front or on the flanks of a position screen the advance of the enemy, afford facilities for unforeseen attacks, or at least enable an enemy to deploy to attack more or less under cover.

Small patches of wood are often useful as *points d'appui* in an action.

Fighting in large woods should, if possible, be avoided, for as there can be little or no supervision on the part of the officers, troops soon get out of hand, and even in the most favourable circumstances the scattering and mixing together of units is

* Part 3, Chapter VII, F. 4.

always to be feared. In addition, troops holding the edge of a wood are liable to suffer much from Artillery fire.

The following points should therefore be considered in making a reconnaissance of woods :—

- a. Position and extent.
- b. Nature and configuration of edges.
- c. Roads, paths, tracks and clearings.
- d. The kinds of trees, where thick and where scattered.
- e. Nature of the soil, with special reference to the undergrowth and movements of troops off the roads.
- f. Obstacles to movements, such as streams, water, or marshy places.
- g. Villages in the woods, with any clear spaces round them.

As regards the difficulty usually met with in finding one's way in woods, it may not be out of place here to give a short description of the system adopted in Prussia of dividing the large crown forests into "*Jagen*" (lit., game drives) by "*Gestelle*" (rides).

The latter consist of "*Hauptgestelle*" (main rides), generally running east and west, and lettered alphabetically in large Latin letters from south to north, and "*Nebengestelle*" or "*Feuergestelle*" (side rides), running at right angles to the former and lettered alphabetically in small Latin letters from east to west. These rides are generally about 880 yards apart. The portions of the forest or "*Jagen*" thus enclosed by these rides cover about 64 hectares (160 acres) each, but those lying on the edge of the wood are, of course, more or less modified in shape and size by the irregular form of the edge of the forest. "*Jagen*" are numbered according to the same system as the "*Gestelle*," thus, the south-east "*Jagen*," bounded by the "*Gestelle*" *A* and *a* on the north and west respectively, would, as a rule, be known as No. 1.

At the points where "*Gestelle*" cross, small posts of stone or wood are fixed in the ground, on which the letters and numbers of the neighbouring "*Gestelle*" and "*Jagen*" are marked.

The point of crossing of two "*Gestelle*" thus furnishes at once the means of finding the way when lost, especially as very often the letters of the "*Gestelle*" are shown on the map.

The more impassable the wood itself the more important becomes the reconnaissance of the roads through it, and also the more difficult.

J. RECONNAISSANCE OF LOW-LYING GROUND.

Low-lying ground, if extensive, is an obstacle to the movement of large bodies of troops. The field of view is usually much restricted by cultivation, and such country is unsuitable for fighting.

A reconnaissance report on the above should give information as regards—

- a. Position and extent of the valley or depression.
- b. Nature or character of the ground. Whether cultivated or dug for peat and intersected by banks or ditches.
- c. Roads, paths, tracks, defiles and embankments (*see* under heading L., next page).
- d. Ground off the roads. Whether passable for the different arms, and how far the state of the ground varies at different times of the year. It may be mentioned that low-lying ground is rarely quite impassable in summer, or in winter during a frost.
- e. Positions as regards headings c and d with the possibility of attacking them.

K. RECONNAISSANCE OF MOUNTAINS.

The reconnaissance of mountains is a very difficult matter, inasmuch as the vision is generally much obscured, especially when mountains are wooded.

Good maps are consequently indispensable. Very particular attention should be paid to places where troops can, to a certain extent, deploy for action. Otherwise the chief points to be considered are whether, or to what extent, troops can be moved, housed and fed,

The reconnaissance report should furnish information on the following points :—

- a. Position, extent, character, and relative heights. Main and secondary ridges or spurs, plateaux, and main and secondary valleys should all be considered, giving steepness of slope.
- b. Climatic conditions and how they affect the movement of troops.
- c. Surface. The actual surface of the mountains (rock, boulders, stones, débris, or earth,), marshy or rocky places, cultivation (woods, ploughland, meadows), towns, or villages, with the resources they contain.
- d. Rivers, streams or lakes.
- e. Roads, tracks, paths, and passable ground, especially noting ground where troops in formation could move off the roads (generally only found in valleys or on ridges). Places where troops can debouch from the mountains.
- f. Special military considerations, such as positions, places for bivouacking, or where defiles or passes, could be held.

For reconnaissance of mountain roads, *see* under next heading, L.

L. RECONNAISSANCE OF DEFILES AND PASSES.

Places where passable ground is contracted as regards width, usually called defiles or passes, have a military importance from the fact that troops in the act of passing such defiles can make but very little use of their fighting power. Thus, a small fraction of a force might find itself exposed for a longer or shorter time to a superior force of the enemy if it were separated from the remainder by a difficult or long defile.

The object of a reconnaissance would then be to ascertain the difficulties or obstacles presented by a defile. These depend on the length, breadth and practicability of the defile itself, as

well as on the extent to which the ground on either side of the defile is practicable for troops and, again, on the peculiar character and features of the country near the defile, as facilitating or hampering attack or defence, or a retreat when pressed by the enemy.

The *length* of a defile must be considered, both as regards the time required for the different arms to pass it, as well as whether it is exposed to fire from one end to the other. The longer a defile is, the easier is it to defend, the chief reason for this being that the enemy, when trying to pass it, is for a longer time almost helplessly exposed to the defender's fire; and if a defile be sufficiently long to prevent the assailants from their end bringing an effective fire to bear on the defenders at the other, it may, if held by a sufficiently strong and well-posted body of troops, be practically impossible to force.

The *breadth* of a defile has to be considered from the opposite point of view to the length. The broader a defile is, the wider will be the front, and consequently the more powerfully can the attack be developed. Again, a force being able in a broad defile to pass on a wide front with a diminished depth, can more rapidly clear the defile when the defenders have been forced from it by the leading troops.

As regards *practicability*, a defile may be viewed as a "road," and its character in this respect judged from the nature of the subsoil and gradients.

What really gives a defile its importance is, however, the character of the ground or country on either side as regards its *degree* of practicability. Troops attempting to force a defile by a direct attack are, when once engaged in it, in an almost helpless condition owing to their being unable to develop any fire. Fire must therefore be directed from points on the flanks or in rear, unless the ground enables Infantry to be deployed and extended in loose formation—an operation which though attended with considerable fatigue and difficulty, is nevertheless generally more or less practicable.

As regards the character and features of the ground, the first

point to be considered is the presence or absence of Artillery positions on either the attacking or defending side. Any very marked superiority in this respect on either side at once settles the value of the defile from the point of view of the defence. Next to be considered are any existing points that might be used as *points d'appui* for local defence; next, places whence, if acting on the defensive, an extensive view can be obtained and whence all the enemy's movements can be clearly discerned, or, if acting offensively, points where troops may be massed or the defile approached unperceived by the defenders; and, finally, positions which, if held, would at once close the defile with ease, or places where it might be artificially blocked.

A very long defile, such as, for instance, a mountain pass, generally consists of several separate and distinct defiles, or at any rate, is of this description whenever the ground on one or both sides of the defile is such as to enable troops to deploy from time to time. As a general rule, this would enable a force to take up a series of defensive positions one behind the other, commanding the pass. The chief danger to be avoided in such circumstances is the possibility of being suddenly turned by some unobserved or unknown road or path, and taken in flank or even perhaps in rear.

Machine guns are especially suited for use in defiles.

M. RECONNAISSANCE OF POSITIONS.

The military meaning of the word "position" includes a supposition that an engagement is either contemplated* or shortly expected. As the character of the fighting expected may vary very considerably in its object and other attendant circumstances, military positions may be variously classed. The most important may be taken as "positions of readiness," "fighting positions" (distinguished as positions for battle or for advanced and rear guards), and "positions for outposts."† The

* What is usually called a "position of assembly" is not a position but an arrangement of troops.

† Called by the Germans "*Bereitschaftsstellung*," "*Gefechtsstellung*" and "*Vorpostenstellung*" respectively.—(Tr.)

point of view from which a reconnaissance of a position is made must vary according as the position is intended for one or other of these different purposes.

1. POSITIONS OF READINESS

"Positions of readiness" are taken up when an uncertainty exists as regards the positions and movements of the enemy. It is then felt that our line of action must depend on his, and we consequently wish to reserve to ourselves the power of being able to act in one way or another, when all doubts on the military situation have been cleared up. To avoid any unnecessary loss of time, it is desirable in such circumstances that the different bodies of troops or fractions of a force should occupy, and be ready to move from, points where the roads meet which lead in the directions contemplated. In a great many cases, moreover, it would be advisable to order the men to cook their dinners, as then, when the further plan of action has been decided on, the movement once resumed can be all the better executed. It very often happens again that the question of continuing a movement in a given direction is intimately connected with that of occupying or taking up a certain position for battle.

The "position of readiness" must fulfil all the conditions referred to above. It must therefore be chosen with regards to the network of roads covering the country, together with any improvised roads which may happen to have been laid out, so as to enable the various columns of troops to march off with ease in the directions contemplated, without crossing or interfering with each other, or at once to move into the positions for battle previously determined on, without fear of being anticipated or interfered with by the enemy. Assuming that the plans of the General Commanding remain unchanged, the "position of readiness" taken up on one day will often coincide with the position the forces have been ordered to move into on the preceding day; for in ordering troops to march on certain points on one day, the events of the

morrow must be foreseen and provided for. In such cases troops would either be ordered to keep themselves in readiness to move from their bivouacs, or to assemble from their quarters, on certain previously determined places of assembly.

In war, however, it often happens that plans which are being followed and arrangements already made have to be suddenly abandoned, owing to unexpected changes rapidly taking place in the military situation. It is precisely in such cases that a correct appreciation of the state of affairs and a knowledge of the necessary steps to be taken cannot be arrived at before a reconnaissance has been made of the enemy—an operation entailing, of course, a certain loss of time. In the meanwhile, the troops would be held in readiness to move—a circumstance which, however, as has been already pointed out, does not prevent them from cooking their dinners and feeding their horses.

The points chosen for halts of this nature should be selected so that the troops may assemble on them unobserved, and not run the risk of being disturbed by the enemy. There should be firewood and drinking-water in the vicinity. It is, moreover, desirable that the rations carried by man and horse should be supplemented by such food and forage as can be requisitioned in the neighbouring farms and villages.

2. FIGHTING POSITIONS.

These may be classed as positions for battle, or for advanced and rear guards. The conditions which are desirable may be broadly stated as:—first, the greatest possible effect of our fire, and secondly, protection to ourselves. The latter condition must, however, never be allowed to act prejudicially to the former.

a. Positions for Battle.

A position for battle is one in which a battle is to be accepted and fought out until decided. An Army taking up a

position with a view to being sought out and attacked by the enemy, voluntarily places itself thereby, for the time, on the defensive. The question of selecting an exceptionally strong position would in such circumstances depend on whether it was intended to remain on the defensive for a longer or shorter period. Such a proceeding is only justifiable in very rare cases, for great defensive strength in a position is usually only arrived at by the existence in its front of a very serious natural obstacle, which prevents the defenders more or less from assuming the offensive after repelling the enemy's attack. Moreover, a position which is difficult or formidable to approach naturally induces the assailant to attack it by a turning movement.

It would be wrong to believe in a theory advanced by some, that an enemy *must* attack a position of this kind, especially when it is on the flank of his line of operations, and *dare not* pass and avoid it. On the contrary, we must make up our minds that, should the enemy ignore this theory of "must" and "dare not," he must himself be attacked *from* this position, and in such a manner that the defenders on taking the offensive may do so under conditions favourable to themselves and unfavourable to the enemy. If the assailants, whilst in the act of executing a turning movement, are attacked by the defenders from their position, and are able to deploy their forces to the flank thus threatened faster than the defenders can bring their forces over the obstacle in their front, which constitutes the strength of their position, the latter, now turned assailants, might possibly find themselves in a very critical position. And we must suppose besides that, as is generally the case, the side acting offensively is either numerically stronger or made of better fighting material. Consequently, a position, to be a good one in this case, must enable the defenders rapidly to assume the offensive in force, and there must therefore be no natural obstacle of any kind in front.

A position which owes its strength to a natural obstacle situated in front is quite out of the question as a position for battle. Strong points on which the flanks may rest, a *free field of fire* in

front, an extensive and clear view of the country over which the enemy may be expected to make his main advance, and finally a sufficient *depth with covered positions* where troops of all arms may be securely posted, are the most essential conditions. There must be no hindrance or obstacle of any kind to *assuming the offensive at once*. For to assume the offensive directly the state of affairs enables it to be done, must always be the aim of any General placing his forces in a position for battle with the object of arriving at the greatest military results but temporarily constrained to act in a defensive attitude.

An obstacle along the front of a position is therefore anything but desirable in modern warfare. But, on the other hand, seeing the power of modern firearms, the importance of a free field of fire in front of a covered position has immensely increased; and the best is formed by a gentle and uniform slope falling towards the enemy. But such ground, and indeed the view over the country beyond, should not be judged from the position of the defenders only, but from the side of the assailants as well. It requires, indeed, a very marked superiority in Artillery, as well as a very gallant and numerically stronger Infantry, to force an enemy from a position by a frontal attack, when he, from more or less covered positions, can effectually sweep the ground in front with Artillery and Infantry fire. The frontal attack must be rather withheld until it can be combined with an attack on one of the enemy's flanks. The importance of having the flanks of a position secure is then at once evident. This may be brought about by having obstacles or impassable ground on the flanks, or strong positions for Artillery commanding the ground to a great distance. Any turning movement attempted by the enemy must, in the latter case, entail a long detour, causing him to divide his forces, and thereby give the defender a favourable opportunity for a counter attack. The possibility of an attack on the flank may at times be sufficiently provided for by troops held in reserve to meet it by a counter attack, when these would fight under some very marked advantage. Ground on the flanks which is wooded, or which cannot be clearly

commanded, renders a position otherwise excellent untenable or useless when such ground can be passed under cover by the enemy in force.

The limit to the *length* of the position which may be occupied by a given force requires special notice. Formerly the force necessary to occupy a position was fixed at ten men *per* pace *as a maximum*. Though the front of a position is certainly now stronger in itself owing to improvements which have taken place in firearms, we shall be on the right side in not deviating much from the old rule. We must remember that the tendency nowadays of the assailant to turn a flank renders a deep formation desirable on the part of the defender, and practically entails a prolongation of, or alteration in, the line originally taken up by the latter for battle. When Army Corps or Divisions are acting independently from five to eight men *per* metre may be considered sufficient.

The strength of a position is increased if there be strong points suitable for local defence, situated in front or on either flank. These may be small but strongly-built villages or châteaux, patches of wood, and indeed any feature which, strong in itself for defence, requires to be held by but few men, but necessitates the employment and use of considerable forces on the part of the enemy. Where there are no such points, they may, to a certain extent, be artificially created by works of defence, such as shelter trenches or gun emplacements, affording the defenders additional cover. Works of this kind should be placed not only along the front, but on the flanks of a position.

The long range of modern firearms requires a position to have great depth, in order that the reserves may be posted beyond the reach of the enemy's projectiles. Reserves are besides, when thus placed further in rear, all the better able to frustrate any outflanking movement on the part of the enemy, by taking such a movement itself in flank.

Finally, the question of a retreat must be considered. In this case it is first of all desirable that the ground in rear of a position should offer no impediment to the movement of troops,

and be in fact as passable as possible. Impassable ground in rear of a position, or indeed an obstacle which can only be crossed at certain points (such as a river impassable except at bridges or fords), renders the position at once a bad one. But a wood intersected by many good roads and paths is decidedly advantageous, as it quickly screens the retiring force from the view and fire of the pursuers, and at the same time checks immediate pursuit. With a view at once to resist a victorious adversary following up his success, it is always desirable to have a second position ready, where the first movements of a pursuit may be checked.

A reconnaissance report should deal, in logical sequence, with all the points which have just been referred to, and then give a general opinion, taking into consideration the circumstances of the situation. The strategical conditions of the case may, it is true, be fixed by higher authority, as a constant quantity in the problem to be solved; still it should be very carefully pointed out how far a flank which is thereby threatened is more or less exposed or secured by conditions of a tactical character. In some cases a proposal or scheme for the occupation of the position may be required. In such a case, a sketch showing how the position would be occupied by troops is highly desirable. On it should be marked, as far as is possible, by a thick dotted line, the approximate range of vision from the position. Tracts of ground lying within range of Artillery, which are "dead" or cannot be seen into, should be shown by shading.

b. Advanced Guard Positions.

These often coincide with positions chosen for outposts (a matter which will be dealt with further on), but they differ from the latter inasmuch as they must always be considered as positions for battle with a distinct offensive object. To push an advanced guard far ahead of the main position chosen for fighting in, with the object of engaging the enemy, must, as a rule, be considered a faulty measure. Experience in war has shown that it is a mistake to suppose that the plans of the enemy

are more clearly exposed, or that his main strength is partially exhausted, by preliminary encounters of this description. The real result, indeed, of such a proceeding has generally been found to be that the advanced guard becomes hopelessly engaged with superior forces of the enemy, and is driven back with serious loss on the main position. If it receives no support from the main position, it would generally reach the latter, when forced back, in a state which would render its further employment in action on the same day very doubtful. This might have a very bad moral effect on the troops holding the main position, whereas the enemy would momentarily claim a distinct advantage.

If an advanced guard is to be reinforced and supported from the main position to avoid the results just described, the forces intended to hold the latter would be weakened, and the battle would be in the end mainly fought out on quite different ground to that originally chosen. Consequently an advanced guard pushed forward in front of a position should, as a rule, only serve the purpose of observing the enemy and guarding against surprise. The rôle that it would play would consequently be guided in the main by the rules and principles which apply to outposts.

But to push forward an advanced guard which is to engage the enemy in a given position, is a proceeding which is perfectly justifiable when an advance with the main body either into or beyond the position in question is contemplated or determined on. The advanced guard, if attacked, would in such a case be reinforced to the extent required without in any way abandoning the line of action it was originally intended to pursue. The original intention can in fact only be carried out in certain circumstances by pushing forward an advanced guard into action in this way. This would be the case, for instance, in debouching from mountain passes or crossing a river, when the action brought about by the advanced guard would be intended to gain time for the arrival and deployment of the main body. If, in such an engagement, the object cannot be attained by continuing to act on the offensive in the face of superior

forces of the enemy, the advanced guard must be content to remain for a time, at any rate, on the defensive. Consequently a good defensive position must be sought for.

The conditions to be fulfilled by the latter are much the same as those that have been alluded to in the case of a position for battle, especially as regards the effects of fire. The distance of the main body, and the time that must elapse before it can arrive in support, are questions upon which must mainly depend the front that an advanced guard may occupy and the manner of securing its flanks, together with the possibility of gradually extending the front. In any case the position should be at such a distance from, and so situated as regards the position of deployment, or of concentration of the main body, as to afford the latter sufficient space to move up or deploy in line of battle, without being exposed to the fire of the enemy's Artillery.

Should a retreat become necessary, unfortunate results can scarcely be avoided, as, taking the case of an advanced guard pushed over a river to cover the passage of the main body, it must unavoidably have the river running close in rear, and, consequently, accept battle, against all rule, *with its back* to a bridge.

These considerations show that to push forward an advanced guard into a position where it is to fight an action, is a step that should always, if possible, be avoided, but that in any case the main body should be sufficiently near to be able to afford effectual and timely support to the advanced guard in case the latter should be attacked by the enemy in superior force.

c. *Rear Guard Positions.*

A position for a rear guard should be of great defensive strength and have its flanks firmly secured. It should be such as to enable Artillery to be used with effect at a long range, and should require but a comparatively small force of Infantry to hold it. A frontal attack on it should offer serious obstacles to the assailant. To *outflank* or overlap the position during an engagement should be impracticable, and any *turning* movement should entail a wide detour to be effective. The object of

gaining time for the orderly and unmolested retreat of the main body is thus best secured.

Opportunity for assuming the offensive is, in the case of a rear guard, not a condition sought for; consequently a formidable obstacle in front is then very desirable.

A reconnaissance might often be required to be made of several positions for a rear guard in a line of retreat, one behind the other. These must then be at a proper distance apart, depending on the strength of the rear guard. It is hardly necessary to point out that a small detachment takes less time to abandon one position and move into another than a large force, but that at the same time a large force can better maintain itself when actually retiring from one position to another than a small one, though the movement itself may take longer. As we are now only supposing the case of a rear guard provided with Artillery, we may express the minimum distance that should intervene between any two such positions by the extreme range of the field gun, or 4 to 5 kilometres (4,500 to 5,500 yards.)

The enemy would in the long run abstain from attempting frontal or even outflanking attacks which, if the positions were skilfully chosen, must always be accompanied by very severe losses. He would rather try to turn his superior strength to account by turning the flank of the positions and thus manœuvring his adversary out of them. It is evident that, in choosing the flank to be made most secure, strategical considerations are of the first importance, but in some cases it may happen that these may be ignored if it is desirable to give additional weight to tactical considerations. It would then be advisable to select, as far as possible, a series of positions, so that the flank most easily turned or overlapped was not always the same. If it were so, the turning movement of the enemy carried out against one position might be favourably situated for repeating the manœuvre against the next position in rear. In such circumstances a rear guard, although taking up two successive positions, practically gains time only in the first.

In other respects the conditions to be fulfilled by a position for a rear guard are much the same in character as those necessary for a position for battle. But as a rear guard is only concerned in gaining time and not in fighting a decisive battle, the position in question may be more extended in proportion to the force which is to hold it.

It is desirable, if an opportunity occurs, to make a short and sudden Cavalry charge immediately after quitting a position on any advanced parties of the enemy that might push forward rashly in pursuit. A vigorous offensive movement of the kind may often check immediate pursuit and render the enemy cautious. The Infantry would be at the same time enabled to continue its retreat without molestation, on roads screened from the enemy or behind folds in the ground.

3. OUTPOST POSITIONS.

Positions for outposts are occupied with a view to observing the enemy and securing a force against surprise. In the former case a clear view of the surrounding country is desirable, and in the latter, every impediment in the way of the enemy's approach. It may be considered a very fortunate coincidence if both conditions are found to be fulfilled by the same piece of ground. But the necessity for both being present is in fact a rare occurrence, as the object of observing the enemy is generally attained by parties of Cavalry pushed as far as possible to the front, and the necessary precautions against surprise are then sufficiently provided for by occupying with Infantry or Artillery points well suited for arresting the approach of the enemy.

Security against surprise mainly depends on observing the enemy at a very considerable distance in advance, for it should be remembered, outposts are not, as a rule, intended actually to arrest the attack of the enemy, but only to secure the forces they cover against being surprised. It is only in the case of a retreat that a rear guard with its outposts is intended actually to prevent any collision between the main body and the advancing enemy. A position for outposts should, in such circumstances, be much the same in character as a position for a rear guard.

As a rule, an officer who had to reconnoitre a position for outposts, would be given the points or line which the main body was to occupy. The strength of the latter, and the space it would occupy, whether bivouacked or in quarters, would determine the distance, the front, and the nature of the line of outposts, *i.e.*, the line to be occupied by the pickets with their outlying sentries beyond.

This line may be less extended and brought nearer the main body, according as the ground separating the outposts from the main body is better adapted to offering resistance with the object of gaining time, and again in proportion to the distance beyond the chain of outposts at which Cavalry are satisfactorily keeping an independent and uninterrupted watch on the enemy's movements. With regard to the latter point, places where several roads meet, defiles of various descriptions, and towns or large villages should be closely watched, as these are places where the enemy would be likely to be found in force, or by which he would probably attempt to push forward.

If Cavalry are pushed well to the front, the line of outposts would consist of a chain of small detachments acting as supports to the Cavalry, which would be posted on the main roads of the country. They would keep up communication with each other, and would arrange for their own protection against surprise. The reserves of the outposts would act as supports to these detachments. Whether they are to be reinforced in the line of outposts from the reserves, or whether they are to fall back on the latter, must depend on circumstances.

All such questions must be considered with reference to the position of the enemy, our own position, and the topography of the country. No hard-and-fast rules on these points can be given; any stereotyped form should be avoided. (F.S. Regns. 178). The reconnaissance report should comprise a proposal for the general line to be taken up by the outlying sentries, the position of the picquets, of the supports, and of the reserves. Finally, an opinion should be given as to how scouting duties are to be undertaken by the Cavalry, and whether the whole out-

post system should be placed under the orders of one or more officers. The latter question is one that mainly depends on the extent or length of the line of outposts, and on whether it be divided into sections by natural obstacles. If it appears from either of these reasons that a single command be impracticable, it should be abandoned and a divided one substituted.

Of course neither the outpost commander nor the commanders of outpost companies or picquets should allow their initiative to be affected by a report rendered to a higher commander. The reconnaissance should only be considered as a general guide in selecting the outpost line. All commanders should make such dispositions as they may consider advisable, after making a personal reconnaissance.

N. RECONNAISSANCE OF THE ENEMY.

An officer of the General Staff should not shirk the danger of meeting with the enemy, but he must not unnecessarily seek it. He must remember that he is merely sent out *to see*. A wound or the loss of his horse might cause him to be taken prisoner, and the reconnaissance would thus result in complete failure. The fact, moreover, of personally taking part in any fighting is sufficient to distract his attention and impair his powers of calm observation. In certain circumstances, however, a short encounter, such as would be caused by breaking through the enemy's outposts, might be the only way of gaining the desired information. On an occasion of the kind, it is best for him to make up his mind and ride rapidly forward to a point whence the necessary observations can be made. If he succeeds in his object, no further delay on the ground should be made, but, trusting to the speed of his horse, the protection of his own troops should be regained as rapidly as possible.

It is well then for an officer when going on an expedition of this kind, to select his best and safest horse. Any orderlies accompanying him should also be exceptionally well mounted.

As there must always be a certain risk of being killed or captured on such occasions, the officer should never carry any notes or documents which might, if they fell into the hands of the enemy, afford him information. A map and a note-book are things that cannot well be dispensed with, but care should be taken that nothing be written or marked on either which might in any way serve as a clue or hint as regards the object of the reconnaissance. Thus, an officer who has been in the habit of daily marking on his map the positions of his own forces, or of carrying in his note-book extracts from orders on operations, should be careful to leave both behind, and take articles of a less compromising nature with him.

In a reconnaissance of the enemy's position, it is generally a question of ascertaining the best way and means of forcing or dislodging him from it, and reporting accordingly. In the case of a skilfully-chosen position, a frontal attack will rarely lead to the desired results. Consequently, when setting out on a reconnaissance, the officer should bear this in mind from the very first and direct his attention without delay to that flank of the position which the strategical situation makes it desirable to attack. If, according to the instructions received, a portion only of the enemy's position is to be reconnoitred, the line of action of the troops, which are to attack the adjoining portions of the enemy's position, must be carefully borne in mind. This is all the more necessary if we remember that one of the first things to be considered is the covered approach and deployment of the Artillery which is to open the engagement. An officer reporting on a portion only of the front will find his freedom of choice in this respect inconveniently, though inevitably, limited by the requirements of the troops advancing on the adjacent portions. To avoid complications, it is well on such occasions to come to an understanding with the officers reconnoitring the adjoining portions of the position.

The results of a reconnaissance such as has been just described, carried out *before* the commencement of an action, are, as a rule, meagre and incomplete; for if we except the ground lying in

front, the position itself can only be examined from our side and very little at all seen of the enemy's forces holding it. Consequently, *whilst the action is going on*, every effort should be made, by keeping a sharp look out, to acquire the information which is still wanting and turn it to account as the action proceeds. In the case of a battle on a large scale, officers should be specially detailed to look for and obtain information of this kind.

O. RECONNAISSANCE OF FORTRESSES HELD BY THE ENEMY.

The reconnaissance by the General Staff officer is confined in this case, in the main, to the question of cutting off and investing the place. If any idea be entertained of surprising or attacking the place *de vive force*, or of besieging it, it is necessary to have the co-operation of Engineer officers. If a bombardment alone be determined on, matters are of course almost entirely settled from an Artillery point of view.

In blockading and investing a fortress, the first question to be considered is the selection of the line in which the sorties of the garrison in force, made with a view of breaking through the line of investment, are to be met and resisted. Once determined on, arrangements must be immediately made for fortifying and strengthening it, and the works must be undertaken without delay. Bearing in mind then that the garrison, being centrally situated, can suddenly bring a superior force to bear on any point in the circle of investment, the questions of posting reserves and of establishing good and safe communications between the different corps holding advanced positions in the line of investment must be at once dealt with. The situation is especially difficult when, as is often the case, the fortress is situated on a large river, thus dividing the investing force, from the very first, into two distinct portions. Positions for establishing bridges must then be sought and, when chosen, strongly fortified.

The position to be occupied by the outposts is in this case a very important matter. With a view to cutting off the

place entirely from the exterior, they must be very carefully posted. They must, moreover, by taking advantage of natural and artificial defences, be in a position to hold their own against small sallies of the garrison, or when attacked by the latter in force, at any rate to offer such resistance as would enable the troops they cover to get ready for action.

In active warfare in the open field, this condition is facilitated by placing the outposts at a considerable distance both from the enemy and from the forces they cover. But, in an investment or siege this is impossible from the fact that any increase in the distances referred to at once entails a serious lengthening in the total line of investment, and the latter would very soon become too extensive for the investing force to hold.

If the latter be insufficiently strong it must content itself with *observing* the fortress. This is a proceeding which may not absolutely cut it off from the exterior, but may still effectually prevent the garrison from taking any active part in the campaign, provided, of course, the observing force is sufficiently strong in comparison to the garrison. Only parts of the latter, it should be remembered, would be available for operations beyond the immediate neighbourhood of the fortress. The probable direction, according to the state of affairs, in which any enterprises of the kind would be likely to be attempted, would then mainly decide the position for the main body of the Corps of Observation. In selecting such positions it is very desirable that they should be situated so as to take in flank any offensive movement of the garrison, bearing in mind how concerned any detached parties of the latter would be about their line of retreat. The actual work of observation would, in the case in point, be performed by Cavalry keeping at a considerable distance from the works of the fortress, under the supposition that the observing force is of course much stronger in this arm than the garrison.

A reconnaissance bearing the above points in view would have to be made of the ground in the neighbourhood of the fortress, together with any positions which the enemy might occupy.

Information obtained in various ways as to the strength and composition of the garrison of the place, its Artillery and Engineer means of defence and equipment, and the stores of all kinds which it contained, would, when weighed and compared with the strength of the forces available on our side, determine whether the place should be at first merely *observed*, or at once closely *invested*.

If it be clearly the intention shortly to undertake siege operations *en règle* or to proceed to a bombardment, the reconnaissance of the place, undertaken in this case with the co-operation of Artillery and Engineer officers, should be made with a view to investing the place in such a way that the siege operations contemplated may be advantageously begun and carried on. The General Staff officer must, on an occasion like this, be careful not to forget that neither a siege *en règle*, nor a bombardment, can dispense with Infantry as its main support. How circumstances, arising from the choice of the front to be attacked are likely to affect this arm is, then, a question for him to examine carefully.

If a surprise or an assault be contemplated, the first question to be considered is whether, owing to the carelessness of the garrison or the weakness of the works, there might be a fair chance of success. Next, the roads by which the place may be approached must be most carefully reconnoitred, so that each unit may be clearly and distinctly assigned its *rôle* in the enterprise. Any uncertainty or want of clearness in the orders issued, arising from the roads or ground having been imperfectly reconnoitred, is sure to result in failure.

The General Staff officer and the Artillery and Engineer officers who act as his technical advisers are mutually responsible that no unforeseen obstacle or impediment, to the existence of which they have omitted to draw attention in time, causes the attempt to fail. If their reconnaissance is incomplete in this respect, it is their duty not to recommend the attempt.

More detailed information as to the attack and defence of fortresses cannot for obvious reasons be given here.

P. RECONNAISSANCE OF RAILWAYS.

1. GENERAL STATISTICS AND DETAILS.

a. The line.

a. Permanent way. Gauge. Whether the line is single or double throughout or only double for certain lengths.

β. Gradients. In ascending a gradient below 1 in 100 the ordinary traction is sufficient. Between 1 in 60 and 1 in 100 an additional engine is necessary either dragging in front or pushing in rear (in the latter case uncoupled). On steeper gradients a troop train must be divided. In descending a gradient between 1 in 100 and 1 in 60 speed must be slackened, and on steeper gradients than 1 in 60 the train must be divided. This precaution must also be taken when a gradient of 1 in 100 or more is on a sharp curve.

A succession of gradients ascending and descending affects the traffic very considerably.

γ. Curves. Giving the radius. When this is less than 300 metres, speed must be slackened. Frequent curves, especially when in different directions, affect the traffic very much.

When details under headings *β* and *γ* are unknown, it is best to adhere to the usual length of laden train, on such parts of the line as appear to present difficulties.

δ. Distance between stations. On this depends the interval between successive trains. On a single line only stations, where troop trains can meet, *i.e.*, where there are sidings of 500 metres in length in the clear, need be considered. On double lines the intervals depend on the distances between stations in telegraphic communication. Signal stations, *i.e.*, stations where the line is "blocked" until signalled "clear" have also to be considered.*

e. Weight which the permanent way can support. Rails

* Known in England as "signal boxes" or "signal cabins."—(Tr.)

and sleepers, how laid, whether the latter are longitudinal or transverse, and whether of wood or iron.

If details are wanting under this heading the weight carried by ordinary trains on the line should not be exceeded.

- ζ. Height and width in the clear in tunnels and under bridges. Minimum clear space and maximum height to which trucks can be laden.

b. Stations.

a. Permanent way. Two lines of rail the minimum necessary; their length in the clear should be given, as well as that of all sidings or extra lines. Cross-over roads. Points. Large turntables for engines with tenders, medium-sized turntables for engines only, and small turntables for carriages. Terminals. Crossings. Traversing platforms working on or below the level of the metals. Distance between lines from centre to centre (from 3·5 to 4 metres).*

β. Entrainment and detrainment. Platforms at the side of or between the lines. Levels of these as regards the floors and footboards of the carriages. Ramps for loading carriages at the end or side, giving dimensions and stating how they can be reached from the principal lines. Platforms or stages in goods sheds. Facilities for making temporary platforms and ramps. Cranes or derricks, whether fixed or movable, with maximum weights that can be lifted. Approaches to the station for troops arriving or leaving. Spaces available for forming up troops or parking carriages.

γ. Storehouses and goods sheds. Places where stores may be loaded or unloaded. Situation so as not to interfere with the entrainment or detrainment of troops. Buildings in the vicinity which might be turned to account, and facilities for the transport of stores to and from them.

* In England the middle space between two lines should be 6 feet wide. It is known as the "six-feet" or "six-foot-way."—(Tr.)

8. Refreshment stations. Sidings or lines independent of the main line, sufficiently long to take whole troop trains, having a clear halting space of from $8\frac{1}{2}$ to 11 yards broad, and beyond this a space of from 88 to 175 yards long by 88 yards wide for sheds, kitchens, drinking fountains and latrines.
- e. Watering stations. Halting space. Drinking water for men and horses, and whether it would have to be brought from any distance. Latrines.
- c. Traffic arrangements.
- a. Water for engines. Number of cubic metres that can be supplied in 24 hours. Rate of flow, per cubic metre (about 35 cubic feet, or 375 gallons). (The engine of a troop train holds about 10 cubic metres and consumes on an average about one cubic metre per hour.)
- β. Coal depôts. Supply usually kept.
- γ. Engine sheds. Number of engines which could be accommodated.
- δ. Workshops for the repair of engines and carriages.
- e. Telegraphs and signals. Wires for railway or general use. System in use for telegraphing between stations. Alarm arrangements for warning watchmen stationed along the line. Visual signals used at entrances and exits of stations and danger signals. Visual signals for watchmen stationed along the line. Signals used by trains (steam whistles).
- d. Rolling-stock.
- a. Engines. Percentage under repair. Engines for station or shunting purposes, and engines with tenders. Passenger engines with one pair of driving wheels for local, reserve, and relay purposes.
- Passenger engines with four coupled wheels have half traction power, and goods engines with four or six coupled wheels have full traction power with troop trains on ordinary gradients. Goods engines

with eight coupled wheels have full traction power on very steep gradients (1 in 40), but with half-troop trains only.

- β.* Carriages. Percentage under repair. Number of 1st, 2nd, 3rd and 4th class carriages, composite carriages (2nd and 3rd classes) and covered goods vans.* Number of seats per axle. Covered goods vans suitable for horse transport.

Open trucks with high sides (5 feet high or more). Trucks with low movable sides or ends. Length of floor, $16\frac{1}{2}$, $19\frac{1}{2}$ and 23 feet and upwards respectively.

Number of wheels to each carriage and truck, and number in each category provided with brakes,

c. Management.

Chairman, directors and secretaries. Managing or working directors, and managers, inspectors, and superintendents of branches or departments. Offices of the various officials. Traffic management. Traffic superintendence. Executive engineer's department.†

f. Railway servants.

- α.* Stations. Stationmasters, assistant stationmasters, telegraph clerks, pointsmen, and shunters.
β. Line. Line inspectors, watchmen, and attendants at level crossings.
γ. Engines. Drivers, firemen, greasers, and drivers, of fixed steam engines.
δ. Trains. Guards, baggage masters, and brakemen.

* The author does not mention the fact, but it is well known that covered vans provided with straw afford more comfortable accommodation for troops on very long journeys than passenger carriages provided with seats. All such vans are marked on the outside in Germany with the number of men or horses they can take.—(Tr.)

† We have given these more in accordance with the management of an English line of railway. It would be almost impossible to translate German railway official titles. Besides, they would convey no meaning to English readers.—(Tr.)

- g. Division of the line in sections.
 - a. Section of the line over which each engine works.
 - β. Stations where the jurisdiction of one Company ends and that of another begins.
 - γ. Stations where the *personnel* in charge of trains is changed.
- h. Duties. Usual spells of duty, and roster. Day and night duties, whether carried on with double, extra, or the ordinary *personnel*. Ordinary day and night duties. Order of duties, and how carried out. Ordinary traffic. Increased traffic.
- i. Any large engineering works on a line of railway, such as bridges and tunnels, should be carefully described. In the early days of railway engineering a great many works on a large scale were designed for a single line of rails only, partly from motives of economy and partly from want of foresight at the time as to the development of railway traffic. To establish a double line of rails at the points referred to is now a matter of impossibility, as traffic would have to be entirely suspended. As a general rule, then, all such undertakings are now designed with a view to eventually taking a double line of rails, though the line may only be intended, at the outset, for a single one.

In addition to questions of traffic, the peculiar construction of bridges and tunnels* deserves special attention from another point of view, and that is, how far their deliberate destruction during military operations would render the line useless for a longer or shorter period.

It is scarcely necessary to add that the co-operation of railway engineers, or officers specially trained in military railway engineer-

* This includes railway bridges of boats or railway ferries, which are sometimes used in the place of large railway bridges. These enable trains or portions of trains to be carried across a river by means of various appliances, or in some cases single carriages to be ferried over. When such contrivances are met with, the amount which can be taken over at a time, together with the time taken in crossing, should be ascertained, as well as whether the passage is likely to be interfered with by ice.

ing duties, can hardly be dispensed with. They should invariably assist in making an examination of a line of railway, and should draw up a separate report containing their own ideas and remarks on the subject.

2. RECONNAISSANCE OF LINES TO BE WORKED.

In time of war a report on the actual condition of a line of railway would seldom be found to convey all the information required for working it. It would be necessary at the same time to have a full account of such means as are available for improving, supplementing, and extending facilities for traffic, together with the sources whence such assistance might be forthcoming.

In the first place, through traffic is impossible without permanent way, crossings, and sidings; engines, tenders, or carriages coals, and water; and station, line, and engine *personnel*.

The way in which the traffic of a line of railway is variously affected by the character of the permanent way, stations, rolling stock, staff of railway servants, and telegraphic communication has already been alluded to.

That one or more essential conditions for working a line of railway may be entirely or partially wanting is invariably to be expected when it has been recently in possession of the enemy, or even within his reach.

To enable traffic to be resumed, and to carry it on when resumed, is, in such circumstances, the business of the military railway authorities and the railway troops. But the officer of the General Staff accompanying the first body of troops which seizes or passes a line of railway, can be of great use to these, and consequently render very valuable service, if he ascertains to what extent facilities and means are to be found on the spot for re-establishing traffic. He may thus add very materially to the value of the report he sends in on the seizure or possession of the line.

Opportunity may be given, and it may seem desirable, in certain circumstances, at once to place such traffic arrangements as are found on the spot under military guard.

The special information of a more technical character which it is necessary to obtain before re-establishing or extending the traffic on a line of railway, is, of course, a matter for officers and employes technically trained and skilled in the subject.

The General Staff officer, however, whose duty it may be to represent higher military interests, and the authorities concerned in such a question, should, in nearly every case, bear in mind that, from his point of view, to open traffic at once, however restricted and primitive it may be in character, is often preferable to postponing it until such preparations have been made as might enable it to be undertaken on a better scale. Traffic may be afterwards improved by further arrangements. Thus the construction of a loop line, for instance, which could be made practicable in from 6 to 8 days' time for trains of from 10 to 20 axles each, but running at the rate of, say, 4 kilometres ($2\frac{1}{2}$ miles) an hour only, should not be neglected because it is expected that a tunnel which is blocked on the main line may be cleared and opened for traffic in perhaps treble that time.

The immense importance of having as much railway communication as possible in rear of an advancing Army, to forward its wants and send back its encumbrances of every conceivable description, should be borne in mind, and no help, however insignificant, despised. The usual rules of technical and engineering perfection must be departed from and those measures adopted which enable difficulties to be overcome most quickly.

3. RECONNAISSANCE OF LINES TO BE INTERRUPTED.

To destroy a line of railway so as to stop traffic entirely, is to use a weapon that might cut both ways. Even a line of railway which is to be abandoned to the enemy, and which he could actually

make use of, should not be permanently destroyed if there is any chance of our being soon likely to want it. As a rule, therefore, a line of railway should only be rendered useless to the enemy by causing temporary obstructions to traffic, and would only be permanently destroyed in a way to render traffic impossible for a very long time on a distinct order being given to do so by the higher military authorities.

In the former case any troops might have to undertake the work, but in the latter the operation would be one usually performed by the Engineers or Railway Troops, and the detailed examination of the line, with proposals for its destruction, would be then matters for the officers of these branches of the service.

Under the heading of temporary or partial demolitions may be classed the destruction of rolling-stock and permanent way. If the latter be ripped up and destroyed, it might appear superfluous to destroy the former, but to destroy the rolling stock only would hardly answer the purpose.

Rolling stock may be rendered unserviceable for a time by removing or smashing wheel boxes, or wheels. In the case of engines, it is sufficient to remove the valves and gearing.

To burst the boilers of engines, and burn or blow up tenders and other rolling stock is to destroy utterly beyond repair.

Permanent way is best destroyed in places on the line where there are curves, and the outside rails should then, as a matter of choice, be ripped up. At stations it should be destroyed at the points. If it be intended that the line is to be rendered useless for any considerable time, several lengths of rail should be removed together, and the line destroyed in several distinct places.

A line is rendered useless for a time by simply removing the fastenings of the rails to the sleepers, and unscrewing and removing the fish-plates on the outside rails.

At stations, demolitions are better effected with explosives, especially dynamite, than with crowbars, cold chisels and sledge hammers. Cavalry Regiments are provided with all the appliances for minor work of destruction of this description.

The permanent destruction of a line of railway is always

best effected by blowing up some important and difficult work of engineering. If no such work exists, a railway may be rendered useless for a considerable time by totally and utterly destroying the permanent way, with all the appliances at stations (such as points, crossings, turntables, tanks, and wells), ripping up and twisting rails, removing or burning sleepers, and removing or destroying chairs, bolts, and fish-plates for considerable distances and in many places on the line. Still, the line could not be said to be thus absolutely destroyed. The traffic would be suspended for a comparatively short time only, but it would be seriously crippled during a much longer period.

The destruction of station buildings is no very serious drawback to traffic. The removal or destruction of telegraphs and signals is far more effective.

When preparing mines for effectually blowing up (or in) high embankments, bridges, viaducts, tunnels, the steep sides of deep cuttings, and high cliffs above or below the line, the resistance to explosion must be carefully ascertained and calculated, so that the effect produced may be neither too much nor too little, but exactly that required. To blow in a tunnel driven in compact rock produces but little effect, but in loose earth or wet clay the line may be most effectually blocked, and it may take a very long time, in some cases even years, to repair the damage and re-open traffic.

When a line of railway is to be destroyed as completely as possible, it is not merely necessary, in selecting the work to be destroyed, to consider how long it will take to repair it temporarily or permanently. It is equally desirable to ascertain whether the point where the line is to be thus destroyed can be avoided and *turned* by using other lines, and if so, how long such a turning movement would take. The officer sent to reconnoitre must, with the help of such technical assistants as accompany him (officers or others belonging to the Railway Troops), carefully consider such a contingency, and, if he thinks proper, select a work for destruction which, if destroyed, might offer greater facilities for repair, but which is situated on a

section of the line that cannot be turned, instead of one which, though far more difficult to repair if destroyed, is so situated that it could be more easily turned.

Narrow gauge light lines and tramways should be reconnoitred from similar points of view. Though such lines have not the same value as lines of the normal gauge, they may still supplement the latter or be of local importance.

CHAPTER VI.

REST AND QUARTERS.

REST is absolutely necessary for man and horse, and cannot be dispensed with for any length of time, even in war. From the very fact then, that, owing to the peculiar conditions of warfare, troops are constantly prevented from enjoying regular and uniform periods of rest, it is the duty of every General holding a command to make a point of invariably giving his troops ample and unbroken rest whenever the circumstances of the situation may justify it. This means in general that night marches and night enterprises should be avoided, since man and beast both require a certain amount of rest at night. The question of rest must, however, be always subordinate to the tactical requirements of the situation.

The question of quarters or shelter is so intimately connected with that of rest, that it would be impossible to consider it separately. The better the troops are housed the more perfect will be their rest, and, consequently, the better the conditions for preserving their health and strength. Thus bivouacking in the open air should never be resorted to unless absolutely necessary, and this point cannot be too strongly insisted on. Experience has shown, indeed, that more men are lost to an Army by such a proceeding, especially in inclement weather, than by the hardest fought battles.

Formerly (up to the time of the French Revolution), when Armies were, comparatively speaking, small, troops encamped during the whole period of active operations in tents which were carried in special wagons or carts, or on pack horses. On the approach of winter hostilities ceased by conventional

arrangement, and the opposing Armies went into winter quarters, where they were completed with men, horses, and *matériel*, with a view to renewing the contest in the spring of the following year.

Again, even during the time of the year suited for military operations, Armies after acting against each other for certain periods of time, were often allowed to withdraw into quarters to refit by tacit consent, which, though not recognised by any actual truce or armistice, practically separated the combatants for the time in the mutual interests—as was then supposed—of both sides. In these circumstances, Armies could be perfectly well kept in a healthy condition under canvas at a favourable time of the year. Their small size, together with the pedantic system of warfare practised in those days, enabled them to be accompanied by baggage trains carrying all their *impedimenta*.

During the French Revolution, Armies were raised by conscription, and tents were given up, as the enormous baggage trains to carry them would have seriously interfered with rapidity and freedom in manœuvring. It was rightly argued that, in the place of 6,000 horses carrying tents for an Army of 100,000 men, it was better to have a similar number of cavalry or an additional hundred guns. The question of shelter from the weather was settled by adopting the system of quartering troops on the inhabitants. Thus the difficulty of finding shelter for an Army was taken from the shoulders of the military administrative authorities, and placed on those of the inhabitants. With the introduction of this principle came a change in the system of feeding Armies, or, in other words, the substitution of requisitions for magazines.

Bivouacking was only resorted to when troops were kept ready for immediate action, as in the case of detachments on outpost duty, or when large forces were closely concentrated within narrow limits on the days preceding or following decisive battles, and the villages in the neighbourhood were not sufficiently large or numerous to afford quarters for all.

Winter quarters are now, strictly speaking, a thing of the past. Decisive battles are soon fought between large Armies, and even if final results are not brought about at a favourable time of the year, or if the war only breaks out on the approach of winter, the bad time of the year is no longer taken as an excuse for not beginning or carrying on warlike operations. Pauses during active operations constantly take place, it is true, at all seasons, and troops may be refitted during short periods of rest in quarters. But such pauses are either the result of a regularly concluded truce or armistice, or are brought about by the fact that events have caused the opposing Armies to be widely separated. This is generally, however, only a prelude to a fresh series of warlike operations.

Troops actually engaged in active operations in the field have sometimes to bivouac, and at other times may be quartered. As a rule, however, a plan which may be regarded as a combination of the two methods is adopted. This may be described as cramming troops to the full extent into every house of a village for *one night only*, and causing the remainder, for whom there is absolutely no accommodation, to bivouac in the immediate neighbourhood, or even in the farmyards or gardens of the village itself, so as to take advantage of any protection against inclement weather, and turn to the utmost account the resources of the place.*

Camps are only resorted to nowadays when military operations are confined for any considerable time to the same place—such as happens, for instance, when blockading or besieging a fortress. The mass of the investing forces would be quartered in villages, but the supports and reserves of the outposts would be huddled, and the bivouacs of the outposts would thus gradually become camps of shelters made of straw or brushwood.

Tents may be used within large fortresses or to accommodate prisoners of war when the weather is favourable, but on the approach of winter they must be replaced by huts.

* This is known to the Germans as the "Ortsbivak" system.

A. BILLETS DURING THE CONCENTRATION OF THE ARMY.

When selecting our place of concentration we must, in addition to providing food and comfortable quarters for the troops which are at first still on a peace footing, also turn our attention to the enemy, and consider his probable line of action as well as that which we propose to take ourselves.

The question of finding billets for the Army follows and is a matter to be settled in conjunction with our civil authorities or may be those of an allied country. The closeness of the quartering varies with the strength of the forces to be concentrated, the extent of country comprised within the limits of the rayon of concentration, and the facilities offered by the latter for quartering troops. As long as the outbreak of hostilities is not imminent, the rayon should be kept as widely extended as possible, to be so far contracted just before hostilities begin, as to enable the troops to be rapidly assembled from their quarters, and to begin warlike operations at once.

When several Army Corps are billeted in close proximity to each other, it is advisable to place them alongside each other so that each occupies a narrow front and a great depth, rather than a front and a depth of approximately the same dimensions. This is best explained by the accompanying figures in which the arrows give the direction in which operations are contemplated.

↑
Fig. A.

IV.	III.	II.	I.

↑
Fig. B.

II.	I.
IV.	III.

In Fig. A a closer concentration, when necessary, can be carried out by closing up the Army Corps on itself, but in Fig. B it would have to be done by closing up one Army Corps on another, in which case the billets vacated by the one in front would be re-occupied by the one in rear. Again, in Fig. A the Army Corps when closed up would occupy the same front as before, so that the duty of covering it could still be performed by the same troops, whereas, in Fig. B, troops belonging to Army Corps III and IV in second line, would have to be brought forward to the extreme front and occupy positions in a country hitherto unknown to them. But it is just at this period of a campaign, when the frontier dividing the hostile forces cannot be too strictly watched, that a detailed knowledge of the ground occupied by the troops pushed to the front is so useful.

It is, of course, assumed that in the arrangement which we have shown to be preferable, four good roads exist by which all four Army Corps could advance parallel to each other. If, however, there were only two such roads, and two Army Corps had to march on each, one behind the other, there would be no possible advantage in placing the Army Corps according to Fig. A, as a preliminary to active operations. The arrangement given in Fig. B would, in this case, be preferable, and it would be merely a question, shortly before actual operations began, of closing up each Army Corps on its own front along the two roads, the two leading Army Corps thus forming a first *échelon*, and the two following a second *échelon*.

This example is sufficient to give an idea of the numerous and various considerations which have to be taken into account when apportioning a large rayon of concentration to various Army Corps.

In the case of a *single* Army Corps, or of a similar body of troops being quartered independently, the best form for the rayon of quarters is a square or circle, provided, of course, the peculiar topographical conditions of the country, or similar considerations, do not stand in the way.

The distribution of the troops within the rayon chosen would be made by tactical units, the character of the country being, at the same time, never lost sight of, so that no topographical feature offering an obstacle to the movement of troops would interfere with the connection between bodies forming the same tactical unit. This consideration is sufficiently important to justify slight variations in the closeness of the quartering.

As a rule, the two Infantry Divisions would be billeted alongside each other, each being distributed in depth rather than in breadth. Their Cavalry should be assigned quarters in front, unless, as sometimes happens, these are allotted to a Cavalry Division or Brigade. In that case, the Divisional Cavalry would be assigned quarters somewhat further in rear. The Artillery should never be given quarters by themselves, but should be billeted among the Infantry. Ammunition and supply columns would be given, as long as quarters were extended, distinct rayons of their own in rear of the Infantry Divisions. On the billets being drawn closer together, the mounted arms (Cavalry and Artillery) would close up to the front, and those quarters hitherto occupied by the Infantry might then be allotted to the first *echelon* of ammunition and supply columns.

Bridge trains should, if possible, be stationed near a river. They could thus be given an opportunity of practising bridging, and might, in addition, establish bridges at points where none existed, but where they would be very desirable for troops quartered in the neighbourhood.

Too much importance cannot be attached to the matter of choosing positions for the various headquarters and Staffs. The points chosen can, in fact, either greatly facilitate or seriously impede the transmission of orders.

The headquarters of an Army Corps should be in telegraphic communication with the Army headquarters, but they should be given, so far as is possible, a central though somewhat forward position in the rayon of Army Corps quarters.

Divisional Staffs should be given as far as possible a central position as regards their own troops, and be near Army Corps headquarters. By this is meant being near not so much in point of actual distance as in respect of means of communication. In other words, if the Staff of a Division were separated from its Army Corps headquarters by a distance of some 20 kilometres, but connected with it by telegraph, it would be practically nearer than if it were only 10 kilometres distant, but not in telegraphic communication.

We now have to consider the positions to be assigned to magazines and hospitals. When the necessary steps have not been taken in this respect by the General commanding the Army, or his officer in charge of "Communications," the most important point in the selection of the positions in question is their connection with railways. Railways enable magazines to be filled and hospitals evacuated. Consequently, the best position for these is actually on a line of railway. On the other hand, local considerations, such as healthy situations and convenience of position in the rayon of quarters, cannot, of course, be ignored.

No unit should, as a rule, be further than 15 kilometres (9 miles) from a magazine. In the case of hospitals, however, the distance may be considerably greater, as improvised wards should always be established by regimental surgeons in towns and villages occupied by troops, for the reception of cases of slight sickness or patients who are too ill to be moved. In all cases which promise to last for a considerable time the patients should if possible be evacuated on hospitals established further in rear.

As a general principle, the local establishment of mobilised field hospitals should be avoided, although there is no reason why the medical *personnel* belonging to them should not be employed, if wanted, in any large hospitals which might be temporarily established. It is important, in selecting positions for the latter, to bear in mind that it is well to choose places where there is a resident civil practitioner, either in the place itself or in the immediate neighbourhood, so that when the troops quit

the district the sick left behind may be handed over to his charge.

In a further advance the sick should be handed over to the authorities in charge of "Communications," or, should this be impracticable, to the local authorities, the former being at the same time informed of the fact.

The above considerations have, it may be seen, mainly reference to the efficiency and welfare of the troops. We have now to deal with points connected with their employment in the field and with precautions against surprise.

Let us first consider the question of fixing alarm posts. The first condition in the choice of such places must be that the troops may be able to concentrate or assemble on them in absolute security, even in the case of the most unforeseen attack. Thus, in cases where there is no natural obstacle in the way of an enemy's approach, such as a large river easily watched, steps must be taken to make good this deficiency by taking additional precautions against surprise, and by keeping the troops quartered at a greater distance from the frontier.

In other respects the points selected as places of assembly must depend on the rayon of quarters of each tactical unit. Moreover, it must be distinctly laid down in orders whether the different battalions, squadrons, and batteries are to proceed directly from their quarters to the place of assembly of the Division, or to go first to places of assembly of regiments and brigades. The latter places of assembly should always, if possible, be chosen, so that the places of assembly of the higher tactical units may be reached without making any detours.

Artillery must never proceed alone to a place of assembly, but should invariably be either accompanied by a special escort detailed for the purpose, or ordered to join a force of infantry or cavalry.

As alarm posts naturally imply the concentration of troops in a *position of readiness*, the remarks on this point in Chapter V apply

equally here. It is an additional advantage, to which too much attention cannot be paid, if there is in the immediate neighbourhood a position well adapted for defence. The circumstances of the situation must always decide whether places of assembly are merely fixed for Divisions and Brigades, or whether the whole Army Corps, or, at any rate, its combatant portion, is to concentrate in every case of alarm on a given point or in a certain position. As a rule, the latter arrangement is not one to be recommended, especially in cases when the time that would be occupied by Divisions and Brigades in moving on their respective places of assembly, would be amply sufficient to enable the necessary orders to be issued as regards the further action of the troops concerned.

Even when war has not been actually declared, the precaution of *protecting the Army by outposts* is advisable, as there is always the danger of an unforeseen attack by an enemy who may disregard the rules of civilised warfare. Experience has, moreover, shown that in addition to deliberate attempts to violate international law, collisions are always liable to take place from misunderstandings or want of judgment, and these, if no precautions were taken against surprise, might entail heavy losses on the side taken unawares. Outposts are also useful in preventing espionage, in obtaining information of the movements, of the enemy, and in training the troops to shake off the habits of peace.

Buildings as guard-houses* are selected in the quarters on the extreme front, and small detachments would be pushed forward on the main roads leading to the frontier. These detachments, taking every military precaution as if hostilities had actually begun, would assist the frontier authorities in keeping a watch on the traffic, examining all persons passing, and arresting suspected individuals, especially those found when patrolling by-roads and paths. In such a case a single Commander would not be appointed for all the outposts in the rayon occupied by the Army Corps; the various detachments

* Called by the Germans "Alarmhäuser" (lit., Alarm-houses). They are simply houses in which the troops are kept ready to turn out at a moment's notice.

would rather, as a rule, be under the immediate orders of their respective Divisional Commanders, and from them receive all necessary instructions.

The various duties, to which we are now referring, connected with the safeguarding of an Army against surprise, are often performed by portions of the first Cavalry Divisions pushed forward to the frontier. If these still occupy the same positions after the various Army Corps have moved up, the latter have only to afford the Cavalry in their front the necessary support by pushing forward detachments of the different arms.

Taking this description of how an Army Corps has to be billeted, and the various steps which have to be taken in consequence, as a basis, we may now examine more closely the share of the work that falls on such occasions to the lot of the General Staff.

Directly the rayon of quarters for the Army Corps is fixed, be it in accordance with Army Orders or by the direct order of the General Commanding the Army Corps in question, the officer of the General Staff specially detailed to make the necessary arrangements would proceed at once to the rayon indicated for the Army Corps, accompanied by an Intendance official, a military surgeon, some *depôt* officials, and a few clerks. During the journey he can, provided he knows the number of inhabitants of the different villages, always prepare some kind of plan, though he may not know the amount of accommodation the district can afford. A map carefully kept up to date as regards railways and metalled roads, affords him a rough guide in choosing points for the establishment of magazines and hospitals. Once on the spot, questions of detail as regards both the latter would be left to be settled by the Intendance official and the surgeon, whilst the General Staff officer would lose no time in fixing the distribution of the troops about to arrive, by coming as quickly as possible to an arrangement with the civil authorities concerned. The latter confine themselves to equalising as much as possible the proportion of troops quartered on the various villages, and this is

a point no less desirable in the interests of the troops. This principle must, however, frequently be departed from to avoid breaking up tactical units.

Until the arrival of the General Commanding, the General Staff officer has to issue orders as to the preparations for the Army Corps in the General's name. He must also see that the various officials co-operate effectively, and they in turn must keep him informed as to all they are doing.

The General Staff officer in question should take up his quarters for the time that he is engaged in this work—for which, as a rule, there would be but a few days available—at some point situated if possible on the railway,* or at any rate where there is telegraphic communication. He would then invite the civil authorities or their representatives to meet him there and transact the necessary business, and he would not quit the place until the whole matter was arranged. He must report important events occurring in the rayon of concentration to Corps Headquarters by telegram, urgent cases to Army Headquarters at the same time.

As soon as the distribution, together with the Tables of Marches, were drawn up and completed, he would forward them to the Chief of the General Staff, or hand them himself to the General commanding the Army Corps, on the arrival of the latter.

When there is time enough it is advisable to make a sketch, in which, by the use of coloured pencils, representing the different arms, the various allotments can be at once clearly shown.

The civil authorities should note everything that concerns them during these transactions. Extracts from the Tables of Quarters or Marches† would be given to the different billeting parties, who precede the troops by 24 hours to take over or tell off the quarters, either by the General Staff officer or by the Station

* In the case of the concentration of Army Corps by rail, it would be at the chief point of detainment.

† The form used for Tables of Quarters is, as a rule, much the same as that used for Peace Manœuvres. A column is necessary to give the magazine from which the troops are to draw rations and forage. The hospital which is to receive their sick must be similarly indicated.

Commandant at the point of detrainment. These extracts, besides giving the necessary information concerning the units to which they refer, should also state whether there are other units with which the village has to be shared, and should give the places where the commanding officers are to be quartered.

From what has been stated, some idea may be formed of the magnitude and responsibility of the duties which the General Staff officer has to carry out for his Army Corps in this matter. It would hardly appear practicable to lighten his labour by giving him the assistance of the General Staff officers of Divisions owing to the fact that there would always be many conflicting interests at work, which could only be satisfactorily and evenly balanced by one authority.

The operation of billeting a Cavalry or an Independent Infantry Division would be similarly carried out by its General Staff officer who would have attached to him, if necessary, an official of the Intendance, and the Divisional surgeon. In every case he must arrive on the spot *before* his Division, even when the latter has been temporarily attached to an Army Corps for quarters, so that no time may be lost in acquiring the necessary information. Besides, he can be of no possible use to his Divisional General when travelling with him in a railway carriage, for all matters connected with the conveyance of troops by rail are entirely in other hands, and have nothing whatever to do with him.

The next proceeding, after completing the arrangements for the actual billeting of the troops, is to select places of assembly in case of alarm, reconnoitre defensive positions and mark the line of outposts. The results of his labours and investigations would be submitted to the Chief of the General Staff, or to the General commanding the Army Corps in the presence of the former.

Finally, the question of ensuring the safe and rapid transmission of orders is a most important one.

The existing telegraphic and telephonic communications would be used by the Corps Telegraph troops to complete connection between the headquarters of Army Corps and

the Staffs of Divisions or of other bodies of troops directly belonging to them, and with Army headquarters, as well as with the headquarters of any Army Corps in the immediate vicinity. Telephonic communication between the troops on outpost duty and the higher Staffs is of immense importance.

B. BILLETS WHEN NOT IN THE IMMEDIATE PRESENCE OF THE ENEMY.

Shortly before the outbreak of hostilities, or, at any rate, immediately war is declared, billets should be drawn closely together, so that the Army can at once begin operations. Tactical considerations are then of the first importance. The allotment of billets is now made to conform to the distribution of the troops, and due regard must be paid to the questions of the interval which it is necessary to leave between the advanced guard and main body, and of the limits beyond which the rayon of quarters should not extend.

The intention of the Commander-in-Chief is the chief factor, but the proximity, strength, state of preparation, and supposed intentions of the enemy have all to be considered. As an example, for instance, the advance of the Third Army and Army of the Meuse on Paris, after the capitulation of Sedan, was made in circumstances which justified a departure from the arrangements made in the movements which preceded the battle.

To ascertain the distance that should be left between the advanced guard and main body, we must first of all reckon the time which would be taken in sending intelligence of the approach of the enemy from the outposts to headquarters, and thence to the troops in quarters, and the time required for those furthest off to turn out, form up, and march to the places of assembly. The time required for the above must be assured by the resistance of the advanced guard. As mistakes and accidents may cause delays, it is advisable only to reckon on the time which would

be available if the advanced guard simply retired without offering any resistance. In the case when the advanced guard is to be supported in the position it holds by the advance of the main body, the position in question must be one of exceptional strength, or outposts must be pushed sufficiently far in the direction of the enemy, to enable very early tidings of his approach to be given.

When retiring, it is well to remember that the main body has, besides assembling, to get into columns of route—the length of road occupied in this formation by the strongest column determining the time necessary. Consequently, the distance separating a rear-guard from the main body must, for this reason alone, be greater than that left between an advanced guard and the main body.

It may then be inferred that when in close proximity to an enterprising enemy, extended quarters, which afford a roof of some description to all troops not actually on outpost duty, are almost a matter of impossibility. It is only by pushing masses of cavalry far to the front, and so keeping the enemy at a distance, that we can have recourse to quarters of this kind—a matter of the greatest importance, both to the welfare and to the efficiency of the Army. Troops must not, however, expect the same ease and comfort in these circumstances as in ordinary times of peace.

The area, in fact, over which quarters may be scattered, is, after all, a somewhat restricted one. For even supposing a Cavalry Division to be pushed a good day's march (20 to 30 kilometres, or $12\frac{1}{2}$ to $18\frac{3}{4}$ miles) to the front, it should always be possible to concentrate an Army Corps (or perhaps even an Army) in the course of one day, so that a battle may be fought on the following day. If this condition be strictly carried out as regards every point comprised in the rayon of quarters, the latter must not exceed a circle, the diameter of which is roughly $22\frac{1}{2}$ kilometres (14 miles), or a square, with sides of some $22\frac{1}{2}$ kilometres. Within the space thus comprised, or from 400 to 500 square kilometres (154 to 195 square miles), we may usually expect to find, in a well cultivated country, some 3,000 or 3,600

hearths (without reckoning towns of any importance). This in the case of an Army Corps on a war footing, would give from 12 to 15 men *per* hearth—or quarters which in time of peace we should consider decidedly close.

The exigencies, however, of war are great, and it should not be forgotten that a much larger force than an Army Corps has often to be assembled in the space above alluded to. It frequently happens, moreover, that the amount of accommodation, *i.e.*, the number of hearths available, is considerably less than that we have given.

When it is not a question of changing quarters daily on the march, the rayon of quarters should be as nearly as possible circular in form with the points of assembly of the main bodies situated near, and as a matter of choice, somewhat in advance of, the centre. When acting on the defensive, the places of assembly would often be on the position previously selected in which to accept battle.

In cases where it is impracticable to give the rayon an approximately circular form, it should be given a greater depth than breadth. A force thus quartered is better prepared for offensive and defensive purposes than if it were extended on a broad front. A large rayon of quarters intended to be occupied by several Army Corps would be subdivided among them, so that the different Corps stood alongside, and not behind each other.

The position of the Army Corps headquarters should be chosen so as to ensure rapid communication with Army headquarters, and information from the advanced guard or outposts being received as early as possible. The best situation is consequently a central one, and well to the front, without being absolutely exposed. The Staffs of the forces immediately under the orders of the General commanding the Army Corps would be established at points in accordance with the principles already laid down.

The positions for magazines and hospitals must always depend to a great extent on the existing communications of the country, as well as on the facilities for their establishment offered by the different towns and villages. If the resources of the country are

small in the latter respect, the work both of collecting and forwarding supplies by railway, and of receiving and removing the sick to the rear, has to be almost entirely performed by the authorities in charge of "Communications."

Let us now examine the duties of the General Staff in finding quarters under the conditions we were discussing.

The Chief of the General Staff of the Army Corps would mark off the rayons of quarters for the two Infantry Divisions, but the allotment of billets would be left to their respective General Staff officers. It would at the same time be intimated, whether the rayons allotted to the Infantry Divisions should provide, in addition, for portions of the Cavalry Division (if one be temporarily attached to the Army Corps), of the Heavy Artillery of the Army, or of the first *échelon* of supply and ammunition columns. If the Army Corps has an advanced guard, the General commanding the Army Corps would assign to the latter a rayon of quarters.

The co-operation of the civil authorities in delimiting the rayons of cantonment and distributing the troops among the various villages is, as a rule, out of the question, owing to the shortness of the time available. Nevertheless, it is always advisable, when allotting quarters to troops in a town or village to have recourse to the mayor, or head man. The General Staff only deal with such matters in the case of very large towns which can accommodate a Division or more. The town would, in such circumstances, be divided into districts which would be allotted to the various units.

As regards the question of *outposts*, the most important point to be considered, next to the military situation at the time, is whether we intend or expect to occupy the quarters in question for one or two days only, or for a longer period. The nearer and stronger the enemy is the more care must be taken in placing the outposts during a long halt and in seeing that their duties are efficiently performed. According to the circumstances of each particular case, a mean can always be arrived at somewhere between the system which would be used

from day to day on the march and that which would be adopted when besieging or blockading a fortress. This mean has a tendency to one or the other of these extreme cases, which we shall presently investigate. It is very rarely necessary to establish an unbroken line of picquets and vedettes. But, on the other hand, provision must always be made for offering serious resistance at certain points, especially defiles. Strong detachments provided with artillery should consequently be posted at such points, and these should push their outposts *beyond* the natural obstacle in question. In certain cases it might be necessary to take steps to destroy the roads by which the enemy could approach.

When a strong force of Cavalry is well in advance or more than a day's march ahead, the duties of scouting and reconnoitring naturally form its chief occupation, thereby ensuring to some extent the safety of the forces in rear. The Army Corps must, in this case, be so disposed as to afford proper support to the Cavalry in its front, and also, if necessary, to undertake the protection of an exposed flank. For the latter purpose a special force, exceptionally strong in Cavalry, or, indeed, composed entirely of this arm, would be detached, to hold some important point (such as the junction of several roads), where it would take up a position, using every precaution, and reconnoitre for a distance of a day's march in the direction whence danger was to be apprehended.

It is the duty of the officer of the General Staff to consider all such matters and bring them to the notice of the General commanding the Army Corps or Division.

The written orders which would be issued on the subject should not contain any unnecessary detail as regards execution. This should be left entirely to the officer commanding the advanced guard, special detachment, or outposts. These officers should be informed of the direction whence the enemy may be expected, to enable them to carry out reconnaissance work, and as far as the service of security is concerned, they need only know the extent of front occupied by the Army Corps in quarters. On this depends

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the interval which should be observed between advanced guard and main body, and the distance from the former to which the outposts should be pushed. It is, moreover, sometimes necessary to indicate certain points to which Cavalry patrols under officers should be sent, to obtain information in connection with the strategic reconnaissance.

When orders have to be issued by the General commanding the Army Corps as regards establishment of magazines or hospitals, the General Staff must first confer on the subject with the Field Intendant or Corps surgeon-general. A similar rule must be observed in the case of the General Staff officers belonging to Cavalry, or independent Infantry Divisions.

C. ONE-DAY BILLETS OR VILLAGE BIVOUACS ON THE MARCH WHEN NEAR THE ENEMY.

By these are meant the rest and shelter which troops endeavour to obtain from day to day during active operations, either after fighting or marching, when in close "touch" with the enemy.

In such circumstances it is often impossible to obtain a space of approximately a day's march in breadth, by pushing Cavalry to the front. Consequently, the Army Corps or Divisions in first line must be kept in a more perfect state of preparation for meeting the enemy, and every precaution should be taken to prevent the daily marching powers of the whole force being impaired by allowing fractions to be moved to any distance on either side of main direction of advance, for the sake of obtaining better quarters.

An intimate connection must therefore exist between the marching or fighting formations of a force, and the system that may be used for finding it rest and shelter during periods of active operations, just as close relations exist between advanced guard duties on the march and the corresponding outpost duties at the halt. These considerations, confirmed by practical experience, show that troops can, in most cases, only use as quarters villages

and houses which are situated on, or only a few kilometres on either side of, the road along which they are marching. Under these conditions, even supposing the force in question to be kept *echeloned* along the road during the night in the formation in which it had been marching, or in that proposed for the next day's march, it would be often quite impossible to get the whole force under shelter, though the buildings might be crammed to the utmost extent. In spite, indeed, of the astounding numbers that may, in such circumstances, be crammed into a village, it must often be inevitable that some, for whom there is absolutely no room, must bivouac on the outskirts. The latter contingency has, indeed, to be accepted by the larger part of the force when, from tactical considerations, it cannot well remain *echeloned* along the road during the night in the order in which it has been moving, but must be closed up on the leading troops, so as to be in a better position to engage the enemy. In this case the force practically has to bivouac, quarters being only available for a very small portion.

It should, nevertheless, be borne in mind, that even in times of the greatest emergency, the most closely occupied quarters are always to be preferred to the bivouac. Consequently, in the selection of halting places this principle must always be recognised, in the absence, of course, of any valid reason to the contrary.

Shelter must be found for the mounted arms whenever possible, because the animals suffer much in bivouacs. It would be very petty-minded to suppose that the Cavalry are thereby unduly favoured. The more horses are saved and rested at night, the more work will they be able to do by day.

A Cavalry Division, when resting, should then, if the tactical situation admits of it, halt at some distance from the enemy; it may be that some obstacle in its front will afford it more or less security. But the Cavalry must, of course, be able to billet in the vicinity of the enemy, relying for security upon reconnaissance, and upon its carbines and machine guns. It will then be better able to save its horses and will get more out of them than

Cavalry which protects itself by always bivouacking and being constantly ready for action.

As regards the actual numbers that can be afforded cover in villages and farms, it is impossible to give in this work anything like approximate figures. Troops occupy, in fact, every hole and corner where there is room for a man to lie down, without considering the inhabitants, and as few men as possible are left outside. A large château or country house with numerous stables, barns, sheds and outhouses may thus afford shelter to a larger number of men than a village inhabited by, perhaps, four times as many people. Villages and buildings in the country are to be preferred to towns, the houses in the latter being only, as a rule, suited to Infantry. An even distribution of quarters to the various fractions of a force is hardly possible, and troops must be content to take what luck brings them. If any particular body of troops invariably fares badly in this respect, it can only hope for compensation when circumstances admit of more regular arrangements. The staffs must be accommodated in the same places as their troops.

The position of magazines and hospitals cannot, of course, be chosen to meet the requirements of troops crammed into quarters for one night only. They must be placed to meet the requirements of the general plan of operations contemplated, and cannot, therefore, enter into the present question.

Measures to be adopted against surprise or attack mainly depend on whether it is a question of seeking rest and shelter after an engagement, or after a day's march, and whether all movements or active operations on the part of the enemy have ceased. It is the duty of the Cavalry nearest to the enemy to obtain correct information as regards the latter point, and afford at the same time a first line of protection to the Army while at rest.

If an engagement has been fought and a victory won, the enemy should be followed up with all the forces available. The best method of ensuring rest for our own side during the subsequent halt is to weaken further the fighting powers of the enemy.

After an unsuccessful action, it is usually desirable to retire at once with the mass of our forces to a considerable distance from the enemy. This movement should be protected by a rear-guard. The latter should resist the enemy in any attempt to follow up his success, and thus enable the main body to rest during the night. The further back the main body has been able to retire, the more easy will it be to find quarters. The outposts of the rear guard should be strong, and act as supports to the cavalry, which should, whenever it is practicable, be left next the enemy.

The roads by which the enemy would push forward should be held in strength, and care should be taken that communication between the different detachments posted for this purpose is securely kept up.

But if the day's work simply comes to a close by a halt of the forces on the march, it is essential that, before the troops are allowed to settle down to rest, correct information be obtained as to whether the enemy with whom "touch" has been maintained or gained during the day, has intentions similar to our own. If it is evident that the enemy is near, it becomes indispensable for us to know whether he is inclined to attack us, to retire, or to remain in such a state of preparation for immediate action as to oblige us to dispense with finding shelter for our troops in quarters. It is the business of the advanced parties of Cavalry to obtain early information on the above, and in the case of a retreat to ascertain if the enemy is still in order of march, and shows an intention of continuing the pursuit. It is only when all doubts as regards these points are cleared up that a decision may be safely arrived at. The questions to be settled are then: whether the enemy is to be attacked, whether his further advance is to be resisted, or whether it is deemed advisable to avoid a collision by halting the main strength of our forces at a greater distance than was originally contemplated, or, perhaps, by continuing the retirement. To enable troops to rest, but more especially to obtain some sort of shelter in villages and buildings, there must be a considerable space between the main bodies of

the opposing forces. In this space the outposts must, by their vigilance, prevent anything in the nature of a surprise on the part of the enemy.

It might perhaps be inferred that if the action of one side depended upon that of the other—a supposition that has been accepted as the basis of the questions which have just been discussed—the opposing forces, by waiting for each other's plans to be developed, would neither of them be able to get any rest at all. As a matter of fact, it sometimes happens, as experience has shown, that both sides remain watching each other till nightfall. Anyone who has experienced this knows the frightful tension of the nerves which such a state of affairs produces. The remedy lies, indeed, in having a Cavalry superior to that of the enemy, either in numbers or skill, and being able to be beforehand in getting an insight into his position, numbers, strength, movements and intentions. In most cases, however, the circumstances of the military situation force one side to adopt some definite decision and immediate line of action, which are accepted more or less willingly by the opposite side, thus very much reducing any delay in bringing matters to an issue. Darkness usually puts a stop to operations on a large scale.

When once the situation is clear, the enemy must be constantly watched by pushing Cavalry well ahead. Directions must also be issued as regards the places where the advanced (or rear) guard and main body are to halt and occupy quarters, either wholly or in combination with bivouacs, giving precise information as regards the villages to be occupied by the different units.

These dispositions should be made as far as possible preliminary to the measures which are to be carried out on the morrow, especially as regards any alterations contemplated in the direction of march or distribution of the troops. Directions must next be given as regards any alterations that may be essential or desirable in the outpost arrangements, in view of the latest information from the Cavalry, and also as to the despatch of special officer's patrols.

Any change in the outposts at dusk or after dark causes great discomfort to the troops concerned, because all the arrangements made by them for the night have to be given up and made again in another place in the dark. The present Field Service Regulations no longer recognise any difference between day and night outposts. Outposts in fortress warfare are under different conditions.*

D. BIVOUACS.†

The bivouac is the most convenient arrangement from a purely tactical point of view, but it may seriously affect the health of troops, especially in bad weather. The rule that the worst billets are better than the best bivouac, is one that cannot for a moment be doubted. But it is nevertheless constantly broken. This very often arises from anxiety or desire to keep troops as much as possible together. At other times it is erroneously thought advisable to spare the troops a short lateral march, and they are consequently ordered to bivouac on the spot instead of finding them quarters. And it sometimes happens that it is the result of carelessness and a want of consideration, which cannot be too strongly condemned.

To bivouac instead of finding quarters is a proceeding which is only justifiable when troops *must* be held ready to fight at a moment's notice, as in the case of those that are on outpost duty, or when it is absolutely necessary to mass troops as closely as possible on the few days preceding or following battles on a large scale.

Since the introduction of portable tents infantry have protection against the weather, which the mounted arms have for the most part to do without. The horses of the latter suffer severely in bad bivouacs. A further disadvantage is that the character and strength of a force in bivouac is easily ascertained. Smoke is visible at a distance by day and fires by night. Moreover, it is difficult to cook in bivouac in bad weather.

If, however, troops *must* bivouac, and there is no help for

* Chapter VI E.

† *Vide* footnote, page 176.

it, the choice of site to be occupied is a question requiring the greatest care. In the first place the ground chosen must be screened from the enemy's observation, and be in the immediate vicinity of a sufficiently good defensible position. Troops never bivouac on the actual position chosen for battle, with the single exception of the case when, after an indecisive struggle, the night is spent rifle in hand, on the ground which has been maintained or won during the day. In all other cases it is desirable that the bivouacs of a force should be *behind* the position it is to hold, so that the latter may be occupied by a forward movement. The ground occupied by the bivouacs must, however, be *sufficiently near* the position to ensure that the troops shall have ample time to occupy it fully, should the enemy make an offensive movement. Consequently, good communications, as little as possible exposed to the enemy's enterprise, both between the bivouacs and the position, as well as between the bivouacs of the component parts of a large force, are in every way highly desirable. Care should also be taken that the reserves, in moving into the positions assigned to them, should, if possible, not have to make a *retrograde* movement from the ground on which they have bivouacked. It follows from these considerations that a force when bivouacking should be more or less *echeloned*. Such formation will also, as a rule, best meet the requirements of space, supply, and water. So long as the force remains in the vicinity of the main roads, its distribution in bivouacs will generally correspond with the order in which it arrived and is to advance.

As Infantry, when bivouacking, is far more quickly got into fighting formation than Cavalry or Artillery, its bivouacs should be so situated as to afford a certain amount of protection to the two latter arms. If Cavalry has to bivouac by itself, some kind of natural or artificial obstacle between it and the enemy, efficiently protecting it against the latter, is, in certain circumstances, very desirable. But it must not be forgotten that the kind of protection thus afforded can, in most cases, be only reckoned on as giving security against a sudden Cavalry attack, and not against Infantry or Artillery fire. It would thus appear that

ground that is not open in character, situated either in front or on the flanks of Cavalry bivouacking, is highly dangerous unless occupied by Infantry. Artillery always bivouacs with the other arms.

Next to the requirements of the tactical situation, come those that have to be observed in the interest of the rest and welfare of the soldier.

A dry sub-soil, shelter from sun or wind, the proximity of villages, the advantages offered by small wooded tracts, the vicinity of good drinking water, facilities for obtaining firewood, straw, and, if possible, supplies close by, are all questions of the highest importance. These, conjointly with tactical considerations, often make it desirable to divide a force into small separate bivouacs, in which the troops are usually more comfortable. In the case of Infantry, a thin wood always forms good bivouacking ground. Cavalry and Artillery may with advantage bivouac on the edge of a wood furthest from the enemy, provided the ground in the immediate neighbourhood is not such as would impede their movements, and the wood itself is occupied by Infantry. The latter may also get a certain amount of protection from the weather by bivouacking under the lee of bushes or copses standing over a man's height. Bivouacs very close to, or on either side of, a main road where there is much traffic, should, as a rule, be avoided. The dust rising from a road may often prove a terrible nuisance, and the noise produced by constant traffic may seriously interfere with sleep.

The space required by units in bivouac is given in F.S. Regns. 403-415. These figures are only intended as a guide and must be made to suit the ground.

Since it takes far longer for troops to settle down and get the requisite supplies, wood, water, and straw in a bivouac than in billets, it is evident that all loss of time should be carefully avoided by making judicious arrangements and preparations when selecting sites for bivouacking.

Consequently, as soon as the General in command has decided to bivouac, the General Staff must at once take the matter in

hand, and, in case it finds itself unable to do all that is necessary in a sufficiently short time, must immediately apply for assistance.

The tract of country a force (down to a Division) is to occupy with its bivouacs depends on the military situation at the time when the decision to bivouac has been arrived at.

The orders issued to the troops (generally given verbally) would first of all fix the positions of the Staffs, which from Brigades upwards should be quartered in villages or houses.* The necessary directions as regards outposts must next be given, for, in most cases, the selection of the ground depends on the protection they afford.

Whilst the troops were still continuing the march to some convenient point, the General Staff officers would ride rapidly to the front, if time were available, and the situation admitted it. They should be accompanied by mounted orderlies, Intendance officials, and, when possible, by the Routine Staff of the Brigades belonging to the Division. The General Staff officer, on arriving on the ground where the troops are to bivouac, would then assign the various sites to the different fractions of the force.

The sites selected for the various bivouacs would then be indicated to the Routine Staff officers present, and these would at once rejoin the units on the march, and act as guides to them. Should no Routine Staff be present, mounted orderlies, furnished with written notes, would be despatched to the officers commanding the units in question in their stead.

Such orderlies as would not be required for duties of this kind might in the meantime be employed in looking for water (the map in the first instance acting as a guide), and in examining the villages and farms to be used by the Division, and the Intendance official in ascertaining the supplies they could furnish, and other similar useful duties.

The General Staff officer would then personally verify on the spot, with special care, the reports he received on the water

* The troops that are to occupy the same villages should be mentioned as well,

supply, and assign the various sources of supply to the different units of the force—the orderlies that accompany him acting as guides to the latter, immediately they arrive on the ground. Usually, however, it will only be possible to allot bivouacs, watering places and areas for supply by the map.

The matter of providing and issuing straw and firewood, as well as the question of supplies of food and forage, are things that chiefly concern the officer of the Intendance, but he must nevertheless come to an understanding with the General Staff officer before submitting any proposals to the General commanding the Division on such questions, so that water and supplies may be fairly apportioned amongst the various units. If, however, such simple arrangements as these were found impossible, the different villages and farms would have to be searched by foraging parties specially detailed by order of the General commanding the Division, and the supplies found by such means distributed to the troops. Fatigue parties of the latter would then be detailed to proceed to the places where such supplies were collected for issue, and fetch their respective shares.

The General Staff officer must obtain information of this kind as quickly as possible, so that when he rides back and meets his General, either on the road or at his quarters, he may be able at once to inform him of the various positions he has chosen for the bivouacs, and submit the necessary orders without delay.

The General commanding the Division would then, in a great many cases, at once accompany the General Staff officer himself to the outposts. Consequently it would be desirable that one of his adjutants should be given sufficient information to enable him to draw up any further orders that might be necessary for the bivouacs.

E. BILLETS DURING SIEGES.

The question of finding quarters for the troops investing or besieging an enemy's fortress, is a subject of immense importance from the fact that a proportionately larger force in such cases

would be constantly on outpost duty, and troops frequently called upon to perform duty of such a harassing nature should, when relieved, be given better quarters and more perfect rest.

The first condition is that the quarters occupied by the troops should be completely out of range of the guns of the fortress.

Consequently, villages that are not at least 8 kilometres ($5\frac{1}{2}$ miles) distant from the works of a fortress armed with heavy artillery, or not so situated as to be completely covered from their fire, cannot be considered nowadays as fit quarters for troops off duty.

Bearing this in mind, then, as well as the fact that in a blockade, and consequently *a fortiori* in a siege, of a fortress, it is essential that a strong force of advanced troops should be pushed forward close to the works of the place and invariably have immediate and ample support against the sorties of the garrison, it is at once clear that the rayon of quarters of the investing or besieging force cannot be given any great depth. For this reason, and in spite of the great length of an investing line drawn right round a fortress, villages have often to be much more closely occupied than would be desirable from a sanitary point of view.

It would be a great mistake to try partially to remedy this evil, by allotting the quarters available to the troops after deducting those that are on outpost duty (generally about one-fourth of the whole force), and only to calculate on housing the troops that are off duty (about three-fourths of the whole force). Such a proceeding would lead to a constant changing of quarters when the outposts were relieved, and the troops could not therefore be expected to take any trouble or interest in keeping the villages in the best possible state for habitation. The latter is a question of the highest importance in preserving both the health and spirits of the troops, for nothing tends to depress the mind more than living in a dirty house presenting the picture of ruin. But this is sure to be the case if the soldier, being merely a bird of passage, does not know whether, after remaining for a few days in a building, he is ever likely to come back to the same place or cannot say to what use the next visitor may put it

If, however, it is clearly understood that the troops coming off outpost duty are, as a rule,* to re-occupy their old quarters, the men have a natural interest in keeping the buildings in a fit state for habitation, and even in going so far as actually to improve and repair them. Again, by clearing the troops for a time entirely out of certain buildings, an opportunity is given of thoroughly ventilating and cleaning them out by fatigue parties told off and left behind for the purpose—a circumstance that cannot but be very desirable for sanitary reasons.

If, after taking all the above questions into consideration, it is found that villages will be too closely occupied for any time, steps must at once be taken to build huts for a portion of the force.

Outposts constantly occupying the same position feel the need of protecting themselves against the weather in every way they can. Straw shelters are made for the sentries; billets are found for the picquets, huts built for the supports, and they will take care to protect themselves from the enemy's fire in every way possible.

The quarters would, in the main, be allotted to the various Army Corps, Divisions and Brigades according to the sectors of the circle of investment they occupy. The latter are determined on from tactical considerations, and, in the case of a siege, with chief reference to the front or fronts selected for attack. The selection of sites for siege parks and dépôts are naturally questions that chiefly concern officers of the Artillery and Engineers, but on the selection of such sites must depend, to a certain extent, the question of quartering the troops, as the greater portion of the Artillery and Engineers would have to be given quarters near such places, or opposite the front or fronts attacked.

Outpost duty before an invested fortress is a matter that must be carried out on the strictest principles, and is one which absorbs an enormous proportion of the forces present. To cut

* It need hardly be observed that this rule cannot be always strictly adhered to; troops must occasionally be moved and changes take place in the quarters, for tactical reasons.

off all communications of the garrison of an invested place from the outside world, requires in itself a closer chain of advanced posts than would be thought of in an army on the move in the field. If the outpost line be too near the fortress, the investing troops might, from the fact that no cover would, as a rule, be afforded them near the place, suffer constant, and, in the long run, serious losses, whilst unable to inflict anything like corresponding injury on their adversaries, screened as they would be behind their works. By keeping the circle of investing outposts, on the other hand, at a considerable distance from the works, the length of the chain becomes so great as to be out of all proportion to the strength of the investing force. A mean between the two extremes must therefore be arrived at. This is best done by keeping further off and in a thinner line by day, when objects can be more easily distinguished, and approaching closer and in a thicker line by night, taking care at the same time not invariably to occupy the same positions. Every effort must at the same time be made to get artificial cover for the outposts, and constantly to increase and improve the protection thus afforded. In the first place it shields them from the enemy's fire, and, secondly, it enables them better to resist his sorties.

Field works of this description, consisting of shelter trenches or rifle pits for the outlying sentries and their supports, with covered communications, and the fortification of points to be held by the supports and reserves of the outposts until the arrival of reinforcements, cannot be undertaken too early, and cannot easily be overdone. The most distinct orders must be issued on the subject by those in high authority, and steps at the same time taken to see that they are rapidly and properly carried out. Work of this description is all the more disagreeable to troops in this case, as in many instances it is a labour that is not in the immediate interests of the men forming the working parties. The outposts being constantly relieved and changed, it is, of course, nobody's business to begin. And yet it is perfectly clear that the stronger and more secure the outposts are made by such works, the more perfect will be the repose of the troops in quarters

behind them, and the more extensive may the rayon of the latter be.

No doubt must exist as to the portions of the line of outposts that may be abandoned on being attacked by the enemy in superior force, and those that are to be held, at any rate, until the arrival of reinforcements. In the latter case, provision should be made for the speedy arrival of support.

It should, moreover, be clearly understood that any point temporarily abandoned to the enemy during a sortie, should be immediately re-occupied on the latter being repulsed. Otherwise it would certainly have been better not to have occupied it in the first instance even for purposes of observation. If possession of the point in question is desirable for the latter purpose, there is all the more reason for regaining it after it has been temporarily abandoned, even if it be only on account of the bad moral effect its permanent loss would produce. Looking at it again from a practical point of view, the besieged and besiegers would by such a proceeding change their respective rôles, were the former to gain and the latter to lose ground in the course of an investment. The besieger should, therefore, take the necessary steps beforehand with a view to facilitating the re-capture of the point, by removing all obstacles that would impede his attack, or in other words, making it as open and indefensible as possible to the rear.

It may, nevertheless, sometimes happen that a point of this description may prove a constant apple of discord between the opposing forces, and it may be justifiable for the besieger in isolated cases finally to give up the idea of re-capture. Such a step is, however, as a rule, to be avoided, and the outposts should never be left in doubt on the subject. An investing force which allows the garrison of a place to retain possession of points temporarily won in a sortie, ceases *ipso facto* from that moment to maintain its character as such.

The suddenness and rapidity with which an active enemy, bent on a determined resistance, can direct sorties, great and small, against a blockading force, render it necessary that the

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latter should use every possible means of obtaining timely information as to the designs of the garrison, and that the necessary information should be disseminated, as far as is desirable, among the investing forces.

One of the first essentials for this is the use of balloons and the establishment of *observatories* on commanding points from which, in spite of their being necessarily at a distance from the works of the place, a good view can be obtained with powerful telescopes, and the massing of troops for sorties detected. Intelligent and highly trained officers should be posted at such observatories, and the latter should be in telegraphic communication both with each other, with the headquarters of the investing force, and with the Staffs of Army Corps, Divisions, and Brigades posted opposite the front under observation. The telegraph should also connect the Staffs of the different Army Corps, Divisions and Brigades both with each other and with the headquarters of the investing force. The latter should also be similarly connected with points of special importance in the line of investment. All points of importance in the line of outposts should be connected by telephone with the rear.

The headquarters of the investing force should be established at the point where the exercise of the supreme command appears most likely to be needed. In most cases this would be somewhere near the line of demarcation between the two sectors of the circle of investment which appear most exposed to the sorties of the garrison. If, when the investment of a place is complete, actual siege operations are contemplated, the headquarters would, of course, not be placed too far from the front selected for attack. The Staffs of Army Corps, Divisions, and Brigades would, as a rule, if there were no valid reasons to the contrary, be placed as far as possible behind the centre of the investing line held by their respective units.

All these questions must be carefully considered by the General Staff from the very first days of the investment, so that during the course of the latter there may be little cause for uncertainty and no necessity for change.

The selection of positions for magazines and hospitals is a comparatively easy question in the case we are at present dealing with. The investment of a fortress may certainly be said to be an impossible undertaking, unless communications with home are kept open; the blockading force, moreover, commands, as a rule, a zone round the place for a distance of several days' march. There would thus be sufficient accommodation and the means at hand to collect and fill magazines and establish hospitals. These conditions would, indeed, become uncertain on the approach of a hostile force for the relief of the place, or were communications interrupted for any considerable time. It is therefore very desirable that such magazines should be equal to providing for the wants of the force for some little time, without receiving regular supplies. But such a state of affairs could not, of course, continue for any length of time.

Further details as to the attack and defence of fortresses are given in the special regulations on the subject.

F. BILLETS DURING AN ARMISTICE.

As far as is practicable every advantage should be taken of an armistice to repair losses to *personnel* and *matériel*. Billets should therefore be selected with this object, but should not be so scattered as to interfere seriously with a timely concentration when hostilities begin again.

An armistice of a few days' duration is consequently of little assistance in repairing the wear and tear of warfare; but it enables troops to rest, and often affords an opportunity of regulating the supply services which may have been more or less thrown out of gear by any rapid movements of the fighting forces. It is only possible to scatter troops widely in billets and turn the resources of large tracts of country to account, when the armistice is to last for a considerable time, and can only be broken off by giving several days' notice. The latter then affords time for the concentration of troops from extended quarters.

It is generally the custom to define a neutral zone of some

one or two days' march in breadth between the hostile forces, to be kept free of troops of either side. This enables outpost duty to be dispensed with as a precautionary measure in the presence of the enemy, and troops would only be called upon to perform ordinary guard duties in their quarters. The quarters should in these circumstances be as extended as possible, the Infantry and the greater part of the Artillery being placed in the towns, the Cavalry in the open country, and supply and ammunition columns distributed so as best to meet the wants of the troops.

If the country occupied during the armistice is that of the enemy, the local means of transport and draught animals would be requisitioned to the full extent for conveying supplies and removing the sick before resorting to the teams and vehicles belonging to the Army; for it should be remembered that these would often be just as much in want of a rest and refit as any other troops.

The distribution of the forces in the various towns and villages must be subordinated, in the first place, to the requirements of the military situation, such as, for instance, the uninterrupted observation of a fortress still in possession of the enemy (even where the fortress and its garrison are included in the armistice under definite conditions) or the occupation in force of certain important points and should be carried out in conjunction with the civil authorities of the country. The latter in an enemy's country would be desirous of distributing as far as possible the burden among the inhabitants according to the resources of the various districts, towns, or villages. As long as military considerations are unaffected by their proposals, it is advisable, as a rule, to be guided in the main by them.

All questions affecting the repair of losses caused by the wear and tear of war must be undertaken by the General Staff, in conjunction with the heads of the various departments concerned. Such questions include the filling up of gaps in the ranks by the arrival of re-inforcements in men and horses, the medical service in the broadest sense of the term, the

replenishment and issue of ammunition, supplies, clothing equipment and repairs to arms and stores.

The Tables of Marches for any concentration likely to take place on the armistice being broken off, together with the Tables of Quarters for the troops when concentrated preparatory to resuming operations, should be prepared and drawn up without delay.

It is again very necessary, especially when occupying hostile territory, to issue distinct orders on the allowances in money and rations sanctioned for the troops whilst quartered during the armistice, to fix the rate of exchange between the money of the country and that of the country to which the troops belong, to define the functions and power exercised by the civil authorities under the military, and to notify the punishments the inhabitants may expect for any offence or act committed against the security and welfare of the Army, or for offences against orders issued.

The final working out in detail of all these questions does not always rest, it is true, with the General Staff. The latter must nevertheless always take a general view of all such matters, be the initiating authority, and see that nothing is lost sight of or neglected.

CHAPTER VII

SUPPLY.

A. HISTORICAL DEVELOPMENT

AN assured system of supply is one of the first conditions of success for an Army in war. Want of food may stop an Army in its victorious career, and even in certain circumstances bring it to ruin.

The regular supply of great Armies (and it is only with great Armies that we are here concerned) with means of subsistence depends upon the resources of the theatre of war, the capacity of railway and water communications, the condition of the roads, and the transport available. Alternations between shortage and superfluity of supplies cannot be avoided.

Even when an Army is moving in accordance with the intentions of the Commander-in-Chief, the size of modern Armies makes the question of supply difficult. Sudden alterations of front, and enforced change of base, the concentration of large bodies within a confined area, before and after a decisive engagement, and the retreat of an Army after defeat, place difficulties which are almost insuperable in the way of the administrative authorities. Military history teaches us that good troops can and must endure hardships for a time without losing their efficiency.

Again, there is the question—whether it is absolutely necessary that the issue of supplies should be constant and uninterrupted? War ignores, by its acts of violence, the importance of the preservation of human life, and calls, even off the battlefield, for efforts to which the weaker succumb. It therefore requires the troops to endure privations from time to time.

Every General in command must, however, try his very best to attain the desired results on the field of battle with the smallest

possible loss to his own side, and the Commander-in-Chief and his General Staff must do the utmost in their power to direct the movements of the forces they are manœuvring, so that the strategical object in view may be arrived at with the least amount of fatigue, hardship, and effort on the part of the troops under their orders. Similarly, those who are in military and administrative charge of an Army must equally consider it their duty to see that the soldier is provided with food and that it is as regularly issued and as good in quality as is possible in the circumstances.

But this must never be considered as the main object to be aimed at. To spare troops in battle, to exact the least amount of hardship and fatigue on the march and in the bivouac, and to ensure regular supplies, though desirable objects in themselves, must be regarded only as considerations to be taken into account, without assigning to them more than their due weight.

These ideas may, perhaps, appear barbarous and inhuman. But on the one hand, is not war in itself a cruel and inhuman proceeding? and, on the other, should we not, by refusing to submit at the right time and place to certain losses, sacrifices, and hardships, run the risk of losing the game altogether, thereby entailing in the long run the terrible losses, misery and suffering which would, for instance, be caused by a signal defeat?

The magnitude of the stake at issue may, consequently, justify a certain degree of recklessness. But such a theory must never, on any account, be used as an excuse for crass ignorance or carelessness. On the contrary, we must scrupulously endeavour to secure for the troops the very best supplies available, and allow this consideration to carry due weight in drawing up our plans of operations.

The question might perhaps be asked—whether the business of securing supplies for forces in the field could not be reduced to some such hard-and-fast rules as govern other questions of military organisation for war? Military history, however, shows that such a system has been tried, and has been

invariably found to be prejudicial not only to vigorous war-like operations, but to the supply of good food to the soldier as well.

Formerly wars consisted, as a rule, of a series of disconnected undertakings separated by pauses of longer or shorter duration, during which hostilities either entirely ceased and only existed in a political sense, or the opposing forces were withdrawn so far apart, that either side could turn its attention to the question of supply without troubling itself about the doings of its opponent. Such a state of affairs naturally rendered the question of supplies of food a comparatively easy one, from the fact that during such pauses the belligerents could scatter their forces widely, and, when the resources of the country were exhausted, could change their position. The supplies for expeditions which were only intended to last for a short time were collected beforehand and carried with the troops. The small size of Armies at the time enabled this to be done.

Modern wars, *i.e.*, those which have taken place since, say, the peace of Westphalia, have, owing to the increased efforts made by the Governments of different countries, been carried on in a more systematic and connected manner. The actual object for which war is undertaken is now kept more distinctly in view, and the supply arrangements must be such as to enable the best measures to be taken for attaining that object. There were, it is true, long pauses in the wars of the seventeenth and eighteenth centuries, chiefly caused by the opponents retiring into regular winter quarters. But the temporary cessation of hostilities thus brought about was more the result of climate or unfavourable weather than of the difficulty of obtaining the necessaries of life.

The change of system may be realised from the fact that, in the wars of Louis XIV, Armies were removed to winter quarters in distant provinces to enable them to be properly supplied with food. We find, however, nothing of the sort taking place in the Seven Years' War.

The system of supplying, like that of raising, Armies,

which was then chiefly done by enlistment, was looked upon more as the affair of the Government than of the nation, and there arose in consequence, with Armies kept separate and distinct from the civil population, a purely military system of victualling made as independent as possible of the country.

The method, indeed, by which Armies were supplied in those days consisted in obtaining supplies from a distance either by direct purchase or State contribution, collecting them in magazines, and conveying them by specially organised transport to the Army, the rations being finally fetched by the troops themselves with the transport which belonged to, and accompanied, them.

The system by which Armies were maintained in the field like that by which they were raised and formed, tended to become more and more independent of the country and its inhabitants. The result was that war became more conformable to rule, more connected in character, and was conducted more in accordance with the object or political reasons for which it was undertaken, but military operations were at the same time very restricted and terribly lacking in energy and vigour. An Army was, in fact, tied to its magazines, and obliged to limit its movements to the fetching and carrying power of its transport, and nothing was more natural as the result of all this, than the cutting down and economising of all supplies to the utmost. By such a system, artificially and carefully planned and entirely independent of the country, the energy of warlike enterprise was crippled and the Army starved.

The brilliant results obtained by the rapid marches and bold enterprises of Frederick the Great are all the more striking if we remember the system then in vogue of feeding troops in the field. At the same time there can be no doubt that had he been unfettered by such arrangements, his exploits would have been far greater. His opponents, it should be remembered, used the same system, but never once managed to turn it to such good account.

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Cavalry certainly lived on the forage of the country, for the artificial system of feeding Armies referred to did not extend to providing forage for horses, owing to its enormous bulk. A horse's ration weighs five times as much as a man's, and the number of horses in an Army amounted in those days to about one-third of its total strength in men.

The French Revolution, which inaugurated a new system of raising Armies—the conscription—introduced with it a new way of feeding them in the field. There was in the latter, it is true, at first, no system, or at any rate, no method or order. The Armies of Revolutionary France took by force all they could lay their hands on. But they lived entirely from hand-to-mouth, without paying the slightest regard to the question of turning the resources of the country to the best account, and of enabling them to make a prolonged stay in the same place. The French, in fact, committed the fault of going to extremes, and of recklessly reversing the system that had hitherto been followed. It was only indeed when Napoleon brought order and method to bear on French military institutions, that something like a mean between the old and new systems was arrived at, or, in other words, that use was made of any means that suited the circumstances. Neither the system of magazines nor that of requisition was neglected. Both were, to a certain extent, combined, so that their respective advantages could be turned to account according to the requirements of time and place.

The problem of supplying Armies in the field has of recent years been facilitated by the use of railways and the partial substitution of preserved for fresh provisions. The administrative authorities of an Army have nowadays constantly to establish magazines and to keep them in touch with the troops. The latter, when moving rapidly, live as much as possible on the country. In difficult or critical circumstances, *i.e.*, when large masses of troops are concentrated in a small space, as happens immediately before decisive battles are fought, recourse is had to the supply columns, and finally to the "iron ration";

carried by the soldier. The whole art of supplying an Army consists indeed in finding the system that is best in the circumstances, and only in cases of absolute necessity falling back on the supplies the troops carry with them.

B. SUPPLY SERVICES.

The arrangements for the supply of the troops during the period of mobilisation will be fixed during peace by the Corps Intendants in accordance with the instructions of the Generals Commanding Army Corps. Supply measures on a larger scale, and those which are of more general importance, will be carried out by the Corps Intendants, and their subordinates, in accordance with direct instructions from the War Office.

The forwarding of supplies from home in war-time is arranged by the War Office in co-operation with the Intendants, who have taken the place of those with the Armies, in so far as it is carried out by road, up to the point where supplies are handed over to the lines of communication of the Army. The forwarding of supplies from home by rail, or by water, is regulated by the Inspector-General of Communications and Railways.

The higher Commanders, who have the assistance of Administrative Staffs, are responsible for the arrangements for supply in the theatre of war; but subordinate Commanders have also to make every endeavour to keep their troops supplied with good and abundant rations.

The Intendant-General of the Army on the Great Headquarters Staff is the head of the supply services of the Army. He arranges for the supply of the Army on a large scale, in accordance with the instructions of the Commander-in-Chief, and superintends the forwarding of food stuffs in co-operation with the Inspector-General of Communications and Railways. He also sees to the necessary adjustment of the various requirements of the different Armies.

The Army Intendant arranges for the supply of the Army, in accordance with the orders of the General in command, and the

particular instructions of the Intendant-General. He does not interfere in general with the supply arrangements of the units composing the Army (Army Corps and Cavalry Divisions). His duties consist in assisting, by foresight, and a proper adjustment of the various claims, the Corps and Lines of Communication Intendants under his orders. He directs the supplies ordered up by the Intendant-General, or forwarded by the Lines of Communication Intendants, to points where they are, or are likely to be, required. If the Army is acting independently, he does not refer to the Intendant-General.

The Lines of Communication Intendant regulates the supply arrangements of the lines of communication of the Army in accordance with the instructions of the Inspector of Communications and of the Army Intendant. His chief duty consists in having supplies for the Army ready when required, and in forwarding them in time; and also in utilising the resources of the country through which the lines of communication runs, as supplementary supplies for the Army. He has to make arrangements for forwarding supplies by rail in conjunction with the military railway officials.

The Corps Intendant is charged with the supply arrangements of the Army Corps, under the instructions of the General commanding. He must see that ample supplies are always available, either from the area allotted to him from which to draw supplies, or by bringing them up in good time from the rear, and must have them stored in fixed or movable magazines. Supplies will be forwarded from the lines of communication in accordance with the demands of the Army Intendant. The control of the supply establishments of the Army Corps (magazines, field bakeries, and supply columns) is one of the special duties of the Corps Intendant; the General commanding disposes of these units in accordance with his proposals. No hard-and-fast rules for the permanent supply of an Army Corps can be laid down. Difficulties must be overcome by a skilful use of the resources available.

The Divisional Intendant has in the first place to see that

the supplies to be found in the theatre of war are utilised by the troops. He acts under the orders of the General commanding the Division, and of the Corps Intendant. He has to administer and distribute the supplies found by, or forwarded to, him. All orders to the troops on supply matters are issued by the military staffs. The administrative officials can only issue orders direct to the supply columns in exceptional circumstances, and must at the same time report to the Commander concerned.

The Intendants should always be with the General on whose staff they are serving, so that they can make the necessary arrangements for supply when the military situation changes. They are assisted by subordinate officials.

The supply officers have to regulate the supply arrangements of the units in detail, in accordance with the instructions of their superiors. The Quartermasters are at their disposal. They receive the supplies for the troops, carry out purchases or requisitions, distribute supplies, and superintend the transport from the places of issue to the troops.

C. SUPPLY ARRANGEMENTS IN GENERAL.

The general instructions issued in peace for the supply of the Army in war can only be considered as a guide, for we have no experience in feeding the enormous masses of troops which form the Armies of the present day. The chief point to be considered is that on the one hand the mobility of an Army is to a certain extent dependent upon the supplies necessary to its maintenance; while, on the other hand, any increase in the number of vehicles for the transport of supplies has an injurious effect upon mobility. Hence the principles of supply in time of war are quite different from those in peace, which are governed by considerations of economy, by law and by regulations.

The chief necessity in war is that supplies should be abundant and quickly delivered. No system of supply is so dear as a bad one.

Since the Administrative Staffs are often as much in the dark

in war about the immediate future as are the Military Staffs, measures of supply will often be taken which afterwards turn out to be useless. Still, every effort must be made to arrange for the continuous supply of the Army, even at the cost of millions. The Supply officials must act with as much determination as the Commanders in the field. A mistake in the choice of the means to be employed does not affect the former so much as neglect. In supply matters the effect of omissions is usually first felt when they can no longer be made good.

It is most important that the orders for supply should be drawn up in accordance with the plans of the Commanders. Supply officials must therefore be constantly in communication with the Military Staffs, and *vice versé*. Commanders must keep their Supply officers informed of their intentions, so that the latter may be able to look ahead. It is well known that arrangements for supply require time to become effective. It is advisable to allow Intendants considerable freedom in carrying out their duties, so that they may be able to act independently when all orders, regulations and instructions fail to meet the case, and some new and unprecedented measure has to be tried.

Supply arrangements must vary considerably according as the campaign is conducted in an enemy's or in friendly country, whether the Army is acting on the offensive or defensive, in field or in fortress warfare. The feeding of a large Army during a rapid advance on a wide front, in a poor or exhausted country, or when an Army is closely concentrated within the same area for a long period, and transport is deficient, is a matter of great difficulty.

Since, as has been already mentioned, the preparation and carrying out of supply arrangements on a large scale require time, it is necessary to begin the arrangement as early as possible. The guiding principle is that the theatre of war is to be used for supplying the Army. The more it can be so used the less are the operations of the Army limited by considerations of supply. How far the resources of the theatre of war can be made available for the troops depends upon the plans of the Commander-in-Chief.

the military situation, the season, the roads available and their condition, the fertility of the country, the size of the Army, and, finally, on political considerations. Even when in hostile territory, there are limits to the exactions to which the country can be subjected, for the district in question may perhaps later be incorporated in the victorious State. Limits to the use to which the country can be put are fixed by treaties in the case of the territory of an ally, and in the case of our own country, by the laws.

Generally speaking, the troops and the Administrative departments must work hand-in-hand in the arrangements for supply. The troops in the front line can make their own arrangements; the co-operation of the Administrative officials is more and more necessary as the distance from the front increases.

D. RATIONS.

1. The soldier's ration to which every officer, soldier, and employé belonging to the mobilised Army has a right as long as the Army is in the field, consists of the daily bread ration and the daily meat, vegetable and grocery ration. The former consists of 750 grammes (1 lb. 10·35 ozs.) of bread or 500 grammes (1 lb. 1·63 oz.) of biscuit, and may, if the meat ration be for any reason reduced, be increased to 1,000 grammes (2 lbs. 3·27 ozs.) of bread, at the discretion of the General commanding the Army Corps. On the other hand, if the fresh meat ration be increased to 500 grammes (1 lb. 1·63 oz.) or a corresponding increase be made in the preserved meat ration, the bread ration may be reduced to 500 grammes.

The daily meat, vegetable, and grocery ration is as follows :—

- 375 gr. (13·226 oz.) of fresh or salt meat (weight when raw), or 200 gr. (7·053 oz.) of smoked beef, pork, mutton, or salt pork, or 200 gr. (7·053 oz.) of tinned meat.
- 200 gr. (3·526 oz.) of rice, groats, or barley meal, or 250 gr. (8·817 oz.) of pulse (peas, beans, or lentils), or 250 gr. (8·817 oz.) of flour or meal, or 1,500 gr. (3 lbs. 4·7 oz.) of potatoes, or 150 gr. (5·79 oz.) of tinned vegetables.
- 25 gr. (·8817 oz.) of salt.
- 25 gr. (·8817 oz.) of coffee (in roasted berries), or 30 gr. (1·058 oz.) if unroasted, or 3 gr. (·1763 oz.) of tea, with 17 gr. (·5996 oz.) of sugar.

The following will approximately furnish rations for one day* :—

- (a) For a battalion, $1\frac{1}{2}$ oxen, 5 pigs, or 17 sheep or calves.
- (b) For a Cavalry regiment, 1 ox, 3 pigs, 12 sheep or calves.
- (c) For a squadron or battery, $\frac{1}{4}$ ox, $\frac{3}{4}$ pig, or 3 sheep or calves.
- (d) For a battery of heavy Artillery, $\frac{1}{2}$ ox, $1\frac{1}{2}$ pigs, or 6 sheep or calves.

If the animals are small the numbers must be increased accordingly.

When troops have to undergo exceptional hardships, the General commanding the Army Corps can order the ration to be increased. This is generally done by increasing by one-third either the meat or vegetable ration, or both. Similarly, the General commanding the Army Corps can order a double ration of coffee, or with the ordinary coffee ration, an issue of 0·1 litres ($\cdot 704$ gills) of brandy, or a ration of tea with sugar, or, instead of the coffee ration, a double ration of tea with sugar.

In the enemy's country the issue of luxuries, such as wine, butter and tobacco, may be sanctioned by the Generals commanding Army Corps. But if the issue is to last for more than two days, it requires the sanction of the General commanding the Army.

In Germany itself the issue of luxuries would have to be sanctioned by the War Minister.

It is well to observe that it is very undesirable, and prejudicial to discipline, to inform troops of any idea that is entertained of raising their rations, without being quite certain that such a measure is possible beyond doubt. On the other hand, troops should always, if possible, be informed in orders of any reduction contemplated in the usual rations that are being issued.

When troops are being conveyed by rail they are given a money allowance in addition to their rations to enable them to purchase refreshments on the road. The allowance is sixpence

* In most parts of Germany the breeding of pigs is a speciality; the sheep are small as compared with English sheep. (Tn.).

per man for every day during the course of which at least four hours' travelling has been done.

2. The forage ration in war is :—

6,000	grammes (13·224 lbs.)	of oats.
2,500	„ (5·511 „)	of hay.
1,500	„ (3·306 „)	of straw.

For heavy draught horses :—

12,000	grammes (26·448 lbs.)	of oats.
7,500	„ (16·53 „)	of hay.
3,000	„ (6·61 „)	of straw.

During railway transport an extra ration of 3,000 grammes (6·612 lbs.) of hay is issued *per* horse for every day during which the actual journey lasts at least four hours.

The General commanding an Army Corps can in exceptional cases order the oat ration to be increased by 500 grammes (1·102 lbs.).

E. FOOD.

The food provided for the troops can only be varied when the theatre of war admits of it. When it does, every opportunity should be taken to vary the monotony of the rations by issuing fresh vegetables, potatoes, wine and tobacco. Only those articles of food which are highly nourishing and durable, are not bulky, and weigh little, can be carried. Such are flour, rice, groats, peas and beans and salt. Heavy articles of food, such as bread and fresh meat, cannot be carried for any length of time, and must therefore be prepared in the immediate vicinity of the troops. Efforts should be made to get the troops to bake their own bread, and in any case they should provide themselves with fresh meat by slaughtering cattle. It is, however, very difficult for the troops to bake, and is usually only possible when they are halted for some time, and then only to a limited extent. It is

quite impossible for large bodies of troops to themselves collect the requisite flour from the country. Ground grain is not usually obtainable in large quantities; it is not worth while to thresh and grind any grain that may be found, more particularly as the amount of bread-stuffs obtainable diminishes with the time of year. Flour must therefore usually be carried with an army. But it must further be considered whether there are enough ovens and sufficient fuel, and whether the troops have trained bakers with them. As these will usually not suffice, the Field bakery columns must assist. The latter should be established as near the troops as possible, so that bread may be issued early, *i.e.*, two days after the bakeries have been opened. One advantage of the new portable ovens is that they can be very quickly set up and taken to pieces again.

If the supply of bread is insufficient, biscuits must be issued instead, or the meat ration correspondingly increased.

Slaughter cattle must be taken directly from the country as far as possible, as they suffer much in condition if they are driven far, apart from the difficulty of finding fodder. It is almost out of the question to forward large numbers of cattle by train in view of the great demands usually made upon the railways in war. Driven or purchased cattle follows with the Second Line Transport, and should usually be killed by the troops 24 hours before use, the meat for the next day being carried on the provision wagons.

Salted or smoked meat and pork serves as a reserve supply. Pork perishes quickly in hot weather; dried meat, when eaten for any length of time, is unhealthy. In case of need, frozen* meat may be of service.

Preserved foods make the best rations. They are already cooked, require only to be heated, and may to some extent be eaten cold. Still, after a time men get weary of them, so that they should be kept for times when forces are closely concentrated, and be used as emergency rations when other supplies fail.

* From the refrigerators of the large fortresses.

Other sorts of grain besides oats must occasionally be used as forage. Peas, beans, Indian corn, roots and bread may also be used. Horses should, however, be gradually accustomed to changes of forage, to avoid ill-effects. The transport of forage is very difficult owing to its weight and bulk. Forage cakes may perhaps serve as a reserve supply. The supplies available in the theatre of war will not be sufficient for large masses of cavalry; in such cases, oats must be carried in spite of all difficulties.

F. SYSTEMS OF RATIONING.

1. RATIONS PROVIDED IN BILLETS.

The system of finding the soldier food and quarters together, *i.e.*, causing him to be fed as well as housed by the inhabitants on whom he is billeted, is by far the most agreeable plan to the soldier. It depends, in the first place, on the possibility of quartering troops on the country, and in the second place, on how far it is possible for the inhabitants to provide them with food. The soldier, at the end of the day's march, finds in this case his meal ready cooked and prepared, or at any rate has to trouble himself very little with cooking or preparing it. Consequently this system should, when possible, be preferred to others. But in a great many cases it is impracticable from the scarcity of provisions in the district, and must be supplemented by other means.

The more troops are concentrated, the less practicable does it become.

In Germany, this system is recognised by the law; payments may be made by receipts or in cash. The latter is preferable in the interests of the inhabitants, and should be followed if money is available.

Provisions for several days are, as a rule, to be found in every town or village. Consequently, troops in about the same numbers

as the inhabitants of a place can be provided with subsistence without any difficulty for a single day, and, as a matter of course, a less number for more than a day, depending on the strength of the force.

Large populous towns are, therefore, well adapted for receiving and feeding strong bodies of troops, as a formidable force (at any rate, of infantry) can thus be massed in a comparatively small space. The country offers less favourable conditions in this respect. Still, where there are from 3,000 to 4,000 inhabitants in an area of from 50 to 60 square kilometres (19 to 23 square miles), the circumstances would be very unfavourable, if no more than from 3,000 to 4,000 men could find subsistence in billets in such an area for a single day. A much larger number of men than this can, however, be safely reckoned on in most cases, as provisions are always to be found in much greater quantities, in proportion to the inhabitants, in the country than in towns. The latter, in fact, are supplied, as a general rule, from the former.

The farmer has generally in his house a bread supply equal to his household wants for from 8 to 14 days, a sufficient store of vegetables and forage to last until the next harvest, and more head of cattle than would supply himself, his family, and his servants with meat for a whole year.

It is quite possible, therefore, when a country has not recently been occupied by troops in strong force, to find, when quartering troops in villages or farms, provisions sufficient for several days for a force amounting to three or even four times the number of the inhabitants. Assuming then that an Army Corps, advancing by two roads, would occupy a depth of about 15 kilometres ($9\frac{3}{4}$ miles), it would require, in order to be able to live for one or two days on the resources of the country in a district of average population and fertility, a breadth of not more than 7 or 8 kilometres ($4\frac{1}{2}$ or 5 miles). And it would, in addition, be quite possible in most cases for a second Army Corps, following at a short interval, to do precisely the same.

Conditions such as these are extremely favourable to military

operations, even in the case of very large Armies. They are, however, liable to fail when, for instance, the country has been exhausted, either by the fact of our own or the enemy's forces having previously passed through it, or when, owing to the communications of the country at certain points being bad—as, for instance, when marching through mountain passes—the villages and towns situated on or near good roads have to bear the whole burden of finding supplies for the troops.

In such cases, or when a considerable stay is to be made in a district, even though the latter be itself a rich one, the resources of the country must be supplemented by bringing supplies for the Army from a distance. The inhabitants may also be allowed to purchase supplies from the magazines in order that they may be of service for longer periods.

It may, however, be safely inferred from the above, that in a country of average population and fertility, an Army of from 100,000 to 120,000 men can, without being so far separated as to compromise its co-operative action in case of battle, perfectly well subsist without magazines or any special arrangement for supply during an advance that is only interrupted by halts of a single day's duration.

Napoleon often made war in this fashion, and the system answered perfectly so long as operations went on without a check, and did not necessitate any prolonged stay in one particular district.

But if circumstances are unfavourable—that is to say, if the population be thin, the land unproductive, or the country already considerably exhausted by the movements of troops; if again the harvest of the preceding year has been a failure, or operations are taking place immediately before the harvest—Armies, if they are to live as much as possible on the country, must be spread on a broad front, must be less exacting, and must to a certain extent be supplied by other means.

Of course, in an enemy's country the system of subsistence in billets will be resorted to without question. In this case, too, payment would be made either by receipts or in cash, the latter

(Red)

only with the express consent of Army Headquarters, the money for the purpose being obtained by requisition.

If supplies are not forthcoming even when recourse has been had to threats, they must be forwarded from magazines established in rear, or collected from neighbouring districts. It may even be necessary to have recourse at certain points to the provision columns, and as an extreme measure to the three days' "iron ration" carried by the soldier.

2. RATIONS FROM DEPÔTS.

Depôts are established either with a view to supplementing the resources of districts which otherwise would be unequal to meeting the demands for subsistence made on them, or to acting as depôts for replenishing the provision columns and "iron rations" carried by the troops, as well as in certain cases to supplying the latter directly with provisions. In the former case they are stationary for fixed periods of time, and in the latter they change from place to place, according to the movement of the forces in the field, following the principal lines of railway and main roads. In some cases the position of a depôt might fulfil both conditions.

The selection of points where depôts are to be established is a question depending in the first instance on military requirements, and in the second on the character and quantity of the supplies available to fill them, and on the means of transport for bringing such supplies to the spot.

Depôts intended to supplement the resources of a country or district should be so situated that no troops drawing supplies from them should be quartered at a greater distance than 15 kilometres ($9\frac{1}{2}$ miles).

As a general rule the different villages would be called upon to provide transport for the conveyance of supplies to the troops, but the military vehicles belonging to the latter might, nevertheless, be employed for the same purpose.

Depôts that are changed from one place to another, following the operations of an Army, are, as a rule, best established at railway stations, or in their immediate neighbourhood. Such magazines often increase in size and become magazines on the "Lines of Communication" from the very fact that places of importance, situated on a line of railway, are often, at the same time, points where many roads meet and are well adapted for the establishment of hospitals or sick horse depôts. They would, moreover, as a rule, be occupied by a garrison which would naturally require some permanent system of supply.

Depôts are filled at home either by contributions made by the Administrative officials, or by contract, or by direct purchase.

Contributions from the country are regulated by law, with a view to a fair distribution of the burden. Contracts afford little security that they will be punctually executed; in any case prompt delivery should be required.

Purchase will usually be carried out by the Administrative departments. The consent of the General commanding the Army is required, except during the period of concentration; he fixes the limits of prices, so as to avoid excessive demands.

In the enemy's country the principle that an Army should live at the expense of the enemy is equally applicable when it is being fed from magazines—or, in other words, the latter should be filled, so far as is in any way possible, from the resources of the enemy's country. When direct requisition no longer meets the case, supplies may be obtained by purchase, care being at the same time taken that the cost of such purchase is covered by appropriating the ordinary taxes of, or by exacting money contributions from, the country.

Though purchase in an enemy's country is usually an expensive method, still there is a saving in transport, and the heavy expenses due to transport and loss in transit are avoided.

The establishment of public markets may be advisable. Traders must, however, be protected by a show of compulsion against the resentment of their fellow-countrymen.

Money requisitions are chiefly imposed on towns, which have not so heavy a burden to bear as the country.

Communication with home must, however, be invariably and uninterruptedly maintained, so that supplies which fail may be at once forwarded.

The conveyance of supplies from depôts to the troops, putting aside those that are quartered on the spot, must be provided for. This may be done by letting the troops fetch their supplies themselves by means of requisitioned country carts or their own military transport, or sending them their supplies by transport placed at the disposal of those in charge of the magazines. In either case it is desirable that the distance should not exceed a certain limit, about 15 kilometres ($9\frac{3}{4}$ miles). Should this be impossible, the troops would have to be supplied by the provision columns, and these would then have to proceed to the depôts to replenish with such articles of supply as had been issued.

When troops are being supplied from depôts, the most important considerations are the repair of any communications that have been destroyed, the best system of turning these to account, and, finally, sufficient transport.

3. RATIONING BY THE SUPPLY COLUMNS.

The supplies carried by either the Supply or Transport Columns should be considered as in reserve, and only to be used when troops can neither be fed by the inhabitants on whom they are quartered, nor from depôts, nor, indeed, in any other way.

The authorities might indeed be complimented on having performed their duty in a most perfect and faultless manner, if at the close of a campaign it could be said that it had never once been found necessary to fall back on the Supply Columns, except for the purpose of merely issuing certain articles, in

order that they might be replaced by others fresh from store. If the Supply Columns must be turned to account, and there is no help for it, every effort should be made at once to replace the articles issued, and cause the columns to rejoin the troops to which they are attached immediately. A Supply Column which has been emptied of its contents, must proceed at once to a point where there is a magazine, or failing this, to some place where a dépôt of supplies has been established (by requisition or some such measure), fill up, and return to the troops by making a double march. In many cases it would have to march by night to leave the roads free by day for the troops.

Since the Supply Columns of an Army Corps contain four days' supplies for an Army Corps and half a Cavalry Division, it is necessary that they should be divided into four sections of about equal strength, each with a day's supplies. The first section would be unloaded on the evening of the first day, the second on the second day, and so on. Whenever possible the supplies in complete columns should be off-loaded and issued. Any supplies not issued should be deposited in the Divisional Field Dépôts.

During an advance, when it was necessary to issue rations to the troops, the first section would be brought forward, at the end of the day's march, to some convenient point. The different wagons, according to the description of stores they contained, would then be despatched to the various units, or the latter would fetch with their own transport from the place where the Supply Column stood, such provisions as they required. In a retreat, the section would remain for a time halted at some point near where the day's march was to end, until the parties told off from the troops to fetch provisions arrived.

As a rule, a section that has been emptied of its stores would immediately afterwards have to undertake a night march. In the case of an advance, the object would be to reach some magazine established further in rear, and in the case of a retreat, to leave the roads clear for the troops and to get a start of them and even, if possible, of the other sections.

It is evident that it is impossible to expect an Army to subsist on the supplies carried by the Supply and Transport Columns during an advance lasting for any time. In a retreat, it is true, the system, in theory at any rate, appears more feasible. In this case, however, it is well to remember that its practical application is liable to be interfered with by the action of the enemy, which might, in some cases, bring about unforeseen changes in the direction of retreat.

As a rule, directions for the movements of the Supply and Transport Columns are given by the General commanding the Army Corps after conferring on the subject with his Chief of the General Staff and Field Intendant. To attach these columns to Divisions permanently would certainly, to all appearances, considerably diminish the work of the Army Corps Staff. Such a proceeding would, nevertheless, by no means free the latter from the duty and responsibility of seeing that all the troops of the Army Corps were properly supplied. It is always possible to attach such columns temporarily to a Division during a given march or movement, or while in quarters, or again when a Division is detached for any considerable time. Even smaller bodies might, in such circumstances, be given for a time a Supply or Transport Column, or in some cases perhaps half of one only.

If it is desired to despatch some supply vehicles as rapidly as possible, the lightly laden two-horse Supply Columns are suitable. They can be very rapidly changed into two-wheeled carts, which may be of value when the roads are bad, or in hilly country.

The heavy laden Transport Columns must, if necessary, be given extra teams. In any case, wagons should be loaded in accordance with the condition of the roads. The tare shown on the wagons should only be taken as a guide.

4. REQUISITIONS.

Requisitions can only be made at home in accordance with the law in the direst need, and must be conducted with every con-

sideration. In an enemy's country, requisitions are the best means of using the resources of the theatre of war.

In order that requisitions may be carried out in a regular and orderly manner, it is necessary that the area in which a force or a military authority has a right to make such requisitions be distinctly and clearly defined.

Requisitions levied over extensive districts are made with the object of collecting large quantities of supplies with a view to establishing magazines, and replenishing supply columns, and are carried out in accordance with directions given by the Intendance (generally of the "Communications"), and, as far as is practicable, with the assistance of the civil authorities of the country. Troops only take part in such matters to overawe by their presence any unwillingness on the part of the inhabitants to comply with such requisitions, or crush any resistance that might be offered. In any case requiring the assistance of troops, matters should be conducted with the utmost severity, and every endeavour should, if possible, be made to obtain and carry off, independently of such subsistence as is being furnished by the inhabitants directly to the soldiers quartered on them, *more* supplies than were originally demanded. When, again, it is necessary to subdue any resistance on the part of the inhabitants, a money contribution should, in addition, be exacted as a fine. Finally, a careful estimate must be made of the *utmost* that can possibly be expected from a country, making due allowance for the absolute wants of the inhabitants, and taking into consideration the question of supplementing their resources by bringing supplies from a distance. Astonishing results are sometimes produced by purchase, the money for such purposes being obtained by contributions levied on the country.

Direct requisitions, followed by the immediate issue on the spot to the troops of the supplies obtained, generally take place when troops bivouac, the troops co-operating in an orderly manner. The villages and farms situated in the rayon assigned to the troops for purposes of subsistence are divided among the

latter according to their position and resources. The quantities of food required are collected by parties of men under charge of an officer, with the assistance, if possible, of the head men of the various villages. In the subsequent issue of the supplies obtained, the Intendance should see that the quantities issued to the various troops are equalised, whenever the amounts obtained from certain villages fall short of what is required or expected. Instructions should be given to advanced guards and cavalry detachments moving ahead, to collect supplies over and above the quantities that satisfy their own requirements, and hand them over to the troops following them.

Requisition by the individual soldier on his own account must not for a moment be tolerated, and should be punished as an act of plunder. As a rule, it is found that a tendency to acts of this description generally arises when troops are quartered on the inhabitants, and in most cases can be accounted for by the soldier not receiving from his host such subsistence as the latter is called upon to give him. In such cases, it is the duty of the officer to step in, and promptly put an end to any refusal or resistance on the part of the inhabitant, by punishing him on the spot. This may be often a very disagreeable proceeding. But it is the only way to maintain discipline on this point, and if once discipline be relaxed or affected in one particular respect, it soon becomes generally impaired. The interest taken by the officer in the welfare of his men in the matter of seeing that they get their proper rations as well as in other respects, tends to increase his authority and strengthen the bonds of discipline.

5. RATIONING WITH THE "IRON RATION."

In the dismounted arms the soldier carries by regulation three days' "iron rations," and the riding horse one day's ration of oats. In the Cavalry the troop horse carries, as a rule, only one day's soldier's rations and one-third of a horse's oat ration. For draught horses three days' rations of oats are carried, partly on the horses themselves and partly on the vehicles. In the case of field

batteries, light ammunition columns, heavy batteries and balloon detachments, two days' rations of oats are carried for both draught and riding horses, but in the horse Artillery and the Infantry and Artillery ammunition columns one ration and a half only; the other heavy Artillery ammunition columns carry three days' rations.

It is of the greatest importance that the above rations, except when it is necessary to replace them by fresh issues, should be carried intact and never touched until it is absolutely necessary to have recourse to them, all other means of subsistence having failed. There is always the danger that the soldier, until he has learnt what it is to suffer from want of food, may be tempted to lose or get rid of his "iron ration," so as to diminish the weight he has to carry. Again, it may happen that the rations are consumed before the moment arrives when they are intended to be used. Such irregularities can only be checked and prevented by minute and constant inspection.

G. APPLICATION OF THE VARIOUS SYSTEMS.

If, under the conditions of modern warfare, an attempt were made to bind an Army to any *one* particular system of supply, it would soon be found utterly incapable of making war, or at any rate would be at a terrible disadvantage when opposed to an enemy who used every system when necessary.

The system of subsisting entirely on depôts means hopelessly hampering and interfering with military operations. General and Intendant would, in fact, change their respective *rôles* . To feed the troops by billeting them on the inhabitants is a plan that can only be safely relied on when the Army is sure of an uninterrupted advance through a rich country which has not recently had to support troops in any numbers; but, on the other hand, it might possibly happen that, this being the only available means of subsistence, an advance which is not required by the situation must be made. As soon, however, as a halt becomes either desirable or necessary, recourse must be had to magazines.

Provision columns and the "iron ration" provide for un-

foreseen emergencies, and may be used to a certain extent if forces are moving rapidly when concentrated. In such circumstances it would be impossible to expect large masses of troops to be fed by the inhabitants on whom they are quartered, and any magazines that it might have been possible to establish could not meet the demand, for want of time. Finally, the most advanced troops could live by requisition on the country, and by the same means small expense magazines might be rapidly established to supply, at any rate, some of the wants of the troops that follow.

Supplies are generally found to fail shortly before and after decisive battles, or when, in a victorious advance, the lines of communication become very long, and means of transport cannot be established as fast as the Army advances. To forward supplies from the rear becomes then a difficult matter, and those found in front are soon eaten up, as an enemy would in retiring, in all probability, have already greatly exhausted the country, and would in most cases have carried off or destroyed, so far as he had been able, all that he could not consume. Relief can be afforded, in such circumstances, only by extending the troops on as broad a front as the military situation will allow, in order to enable them to utilise the resources of a larger area. Forage in such circumstances becomes a matter of exceptional difficulty, as, owing to its enormous bulk, it is almost impossible to forward large supplies of forage when means of transport are deficient and the distances great. Much second line transport would indeed prove a positive burden, and every unnecessary horse an evil. It is therefore desirable to restrict everything under this head to what is indispensable.

It is as impossible to lay down any hard-and-fast rules for providing an Army with supplies as it is for the conduct of military operations. But we may, nevertheless, by carefully examining the various phases of military operations, deduce certain principles which, as the result of experience in war, appear worthy of consideration. It is well, first of all, to point out that the real

difficulty does not lie so much in the matter of *obtaining*, as of *issuing*, supplies. For the former there are all the resources of commerce available, and more particularly a large number of individuals at hand always ready to make money by undertaking contracts. The Intendance may perfectly well make use of such persons in the matter of obtaining supplies, but to entrust them with the matter of issuing them is out of the question.

The province of the contractor ends in fact, as a rule, where the work of forwarding supplies to the theatre of operations begins. A free use of the various means of communication in the theatre of war, the contractor forwarding supplies direct might occasionally prove of advantage to a certain body of troops if they had to deal with a contractor who knew how to arrange it. But the business of supply as a whole would be certain to miscarry, were the means of communication not regulated by the military authorities and managed with a view to meet the various requirements of time and place.

The contractor has, in the main, but one object in view, and that is to forward and dispose of the particular articles he supplies as quickly as possible. It is of little or no importance to him whether such articles are those most wanted at the time or not. A judicious use of the available, and always somewhat limited, means of communication, necessarily requires such articles of supply to be forwarded as are most wanted at the time, according to the degree of urgency. This is a matter with which the military authorities are alone competent to deal.

The latter consequently should take especial care that all means of communication or transport—from the railway train to the requisitioned country cart—are put to the best use in bringing in proper time to the troops such supplies as they most require at the moment. To do this, a highly organised system, and the orderly co-operation of a large number of persons, such as is to be found in the German "Communications" service, are indispensable. At the point where the province of the authorities in charge of "Communications" ends, that of the administrative departments belonging to the troops in the field begins. The

point where the authority and responsibility of the two meet and end must be most carefully defined. The troops themselves take a certain share in finding subsistence, as has been already mentioned. The regimental transport has often besides to be used to bring them supplies to the spot.

During the period of mobilisation the Intendants, who take the place of those serving with the Armies, superintend the arrangements, which have already been made in peace time for the provision of large reserves of biscuits, and for loading supplies, meal and oats on trains, and for the despatch of the reserve supplies which are at the disposal of the Intendant General; the supply arrangements at the railway stations, the organisation of emergency bakeries, filling of reserve magazines, and arrangements with the various trades for delivering cloth, leather, food and other necessities come within their province.

The Field Intendants arrange for the supply of the troops till they leave the Army Corps Districts; this is carried out on the same principle as in time of peace. In places where it is necessary to quarter troops during mobilisation more than 20 kilometres (12½ miles) from headquarters, magazines must be established to facilitate supply, in the same way as at autumn manoeuvres. This must also be done when large numbers of troops arrive in succession at a point where they are to entrain, and near which they must be quartered.

The Field Intendants have also to provide the troops with an "iron ration" and with rations for the first day's march. They have further to arrange for loading all supply vehicles, and for providing the troops with bread, oats (for one or two days) and hay (for one day), for their railway journey, and finally, to pay for billets and for supplies purchased.

During railway journeys, hot meals (including coffee) are supplied by the railway authorities at certain fixed halting-places. These meals, and the provision of canteens and drinking water for men and horses at railway stations, are arranged in conjunction with the Intendance authorities of the District in which the station is situated. If hot meals cannot be provided, cold

meals and hot coffee must be arranged for instead. Advance parties must look after themselves, but they may claim the assistance of the Railway authorities if the latter are informed in time.

Troops which reach the rayon of concentration by road alone, may, in a great many cases, be billeted on the inhabitants. If necessary this may be supplemented by magazines.

During the period of assembly in the rayon of concentration, the forces engaged in the movement cannot possibly subsist on the country comprised in the rayon without the assistance of magazines. It would be quite impossible to feed during such a period—which lasts invariably several days—the large masses of troops thus assembling in a comparatively narrow space, on the resources of the country alone. Consequently the transport of the Army by rail must comprise from time to time special supply trains and trains laden with flour or oats,* with a view to establishing magazines. It is very desirable that the Field Bakery Columns should proceed as early as possible to the rayon of concentration to assist in converting the flour into bread. The question of responsibility of supply within this rayon is defined by making the Army Corps Intendant responsible for the supply of the troops as soon as they reach their final quarters, and the "Communications" Intendant responsible for their supply whilst on the march from the point of detrainment to the latter. The somewhat difficult matter of seeing that the troops are properly supplied during this period is to a certain extent facilitated by the fact of the troops having with them, on leaving the railway, rations for one day. The horses and regimental transport are, it is true, somewhat over-weighted by this measure, but the extra load lasts for *one day's* march only.

At any rate, this is a better plan than to attach, as has been sometimes proposed, to each train conveying troops, vans or trucks containing provisions for several days' consumption.

* A supply train can carry sufficient rations for two days' consumption for man and horse of an Army Corps and half a Cavalry Division. A flour train can supply bread for an Army Corps for eight days. An oats train can supply an Army Corps for three and a half days, and a Cavalry Division for eight days.

On the troops detraining there would always be the risk, in the first place, of finding insufficient transport to carry such supplies further; and secondly, there would often be no space available at the point of detrainment for their temporary storage. The immediate and rapid unloading of all trains is absolutely necessary to prevent any interruption in the traffic, and the supplies carried might thus be easily spoilt. It is well, therefore, to limit the amount of food and forage carried by units to that which its horses and regimental transport can carry when loaded to the utmost.

The administrative authorities should only purchase supplies in the area of concentration when the troops have more supplies in their billets than they can possibly need. The country on either side of the rayon should be used for obtaining supplies. Whether the country on ahead is to be drawn upon must be decided at Headquarters. Every effort should be made to bake large supplies of bread, so that four days' supply beyond that required during the concentration may be available when the army begins to move. The troops should obtain such meat as cannot be provided in the billets, by purchase. If there is a deficiency of cattle, the administrative authorities must establish cattle dépôts in time.

In other respects the rule observed that during this period of a war units are entitled to draw or complete, as the case may be, their daily supplies from the nearest "Communications" dépôt, and also to have such supplies conveyed to them by the transport belonging to the dépôt, simplifies considerably the arrangements to be made. The possibility of carrying out this rule depends mainly on the existence of well filled magazines.

It is desirable, as a rule, that supplies for the day should be issued on the previous evening. Troops are thus provided with rations for the next 24 hours—a circumstance of no small importance, especially in the course of active operations. Were this precaution not taken, troops would often, after a hard day's work, get their food too late.

The changes in the billeting arrangements necessitated by the

gradual arrival and concentration of the troops, the possibility of interruptions caused by the enemy, and delays in the off-loading and transport of provisions, may require the positions of the magazines to be changed. The officers sent forward to the area of concentration will have to come rapidly to important decisions on points such as these.

The troops are forbidden to make requisitions or to issue supplies from the Supply Columns in the area of concentration.

The principles of administration which regulate the distribution of duties govern the services of supply during military operations, that is to say, that supply requirements in the first line must be provided for within the area occupied by the troops, and therefore by the Field Intendants; the officials of the lines of communication are responsible for the second lines of supply and the officials at home have to provide any further assistance necessary. It must be ascertained before the Armies begin to move that all supply vehicles have been correctly loaded and that the emergency rations have been issued. The state of the roads may require the loads of the vehicles to be reduced in order to avoid delays. In ordinary circumstances the Supply and Transport Columns carry four days' supplies, and the provision and forage wagons with the units two days' supplies; so that, if the three days' emergency rations are included, the supply of an Army Corps is assured for about nine days.

If the enemy is at some distance when the Armies first move, and an immediate engagement is not likely, they can move on as broad a front as the number of roads allow. The broader the front on which the advance is made the easier it is to utilise roads and railways for bringing up the requirements of the Armies and the quicker will supplies reach the troops. If the Armies change their direction, or move to a flank when concentrated, the roads must be allotted with great care. When changes of direction take place the Supply Columns, following the Army Corps on the outer flank, are inclined to cut off corners in order to reduce the length of their marches; in such cases they would trespass upon the roads allotted to other Army Corps and would

cross the line of march of the Supply Columns of the latter. This must be avoided in any circumstances, for the crossing of Transport Columns on a single road may not only imperil the supply of the Army, but, in the event of the Army having to retire, may block the roads, which would lead to the most serious consequences. In such a case the Supply Columns should, if possible, be marched by by-roads on the inner flank, and the supplies delivered to the troops on that flank.

The difficulties of supply are increased, if, during a change of front, Army Corps, which have been marching parallel to each other, have to move one behind the other. Apart from the difficulties which such a movement entails on the fighting troops, serious delays will arise from the Supply Columns of the different Army Corps crossing each other if the roads are not at once re-allotted and a Staff provided to regulate the hours of march on each road. In order to facilitate these measures it is necessary in such a case to depart from any established system and to break up the *échelons* of Supply Columns by temporarily interchanging single columns or complete sections between the various Army Corps. If billeting is impracticable in these circumstances, neither are requisitions of much assistance. If requisitions are to be of service for large masses of troops, they must be ordered by higher authority and carried out on a larger scale; but it then takes time, and imposes long marches on the troops, and necessitates detachments which are not justified on tactical grounds. But if the troops are allowed to make requisitions at will the advanced detachments alone profit. Experience shows that the troops always take more than they need for the moment in their desire to obtain supplies for several days at once; this increases their transport to a considerable extent, and, since the teams of requisitioned vehicles are usually bad, it becomes a serious hindrance. This is the more dangerous, as, in addition to the supply wagons, all the thousands of vehicles, which contribute to its efficiency, follow behind a large Army, and in rear of the Army discipline and efficiency rapidly disappear.

If an engagement is in prospect the troops must be relieved

of the duty of finding their food, and must be supplied from the supply columns. If it is necessary to have recourse to this means of subsistence to any considerable extent the marches of the supply columns must be considered when regulating the marches of the troops. If there is any reason to fear that supplies are running short, the guiding principle must be to keep a part of the supply columns so close behind the troops that the empty provision and forage wagons belonging to the units can reach the places of issue, load up, and return to the troops, in one day; or that single supply or transport columns can be brought up to the troops. But in spite of all, the supply vehicles never get any rest at such a time. It is evident that if the weather is unfavourable or the roads bad, supplies must frequently fail. It is therefore necessary to include one or two supply columns in the column of route of an Army Corps marching on a single road, so that the leading division may have some prospect of obtaining its supplies. It must, of course, be considered whether the tactical situation admits of such a measure. If several Army Corps are temporarily marching on one road, as may happen when the Army is very closely concentrated, or is carrying out a change of front, it is necessary to push light supply columns forward and to run the risk of these vehicles falling later into the enemy's hands.

The emergency ration is the last resource, but if supplies have been running short for several days, it should not be assumed that the emergency rations are complete.

When the conditions of supply are very unfavourable it may be necessary to advance more slowly, or to stop the advance altogether, in order to allow of the depôts being brought nearer. The shorter the distance is between the latter and the troops the more quickly and regularly will supply be carried out; the longer the distance is the more carefully must the traffic arrangements between the troops, the supply columns, and the Field and lines of communication depôts be worked out. If the Army has advanced a long way this duty is carried out by the lines of communication, or Army transport columns. It is of great advantage if railways can be used in rear of the Army. Waterways are also of service.

When the Armies are halted it soon becomes necessary to send forward supplies, if it is not practicable to extend on a wide front and use the resources of the theatre of war; requisitions in the immediate neighbourhood soon fail. During prolonged halts magazines are established in the area occupied by the troops; these are filled by requisitions on a large scale, by purchase, by contribution, and by bringing up supplies. Factories and mills may be of service in refitting the Armies. Emergency rations which have been used or have perished must be replaced, and the troops supplied with provisions as at the beginning of the campaign.

An Army will not usually retire till after an unsuccessful engagement, for the honour of its arms prevents a great Army voluntarily retreating without fighting. But in this case the emergency rations will have been used up, the supply vehicles will for tactical reasons have been sent far to the rear, the country will have been exhausted, and there will be no time to make requisitions on a large scale. Distress can only be avoided if the supply columns, when retiring, deposit their supplies along the lines of retreat for the use of the troops as they march by. If it is possible to choose the line of retreat this expedient is practicable, but if the enemy is pressing close, and is outflanking the retreating Army by pursuing rapidly on parallel roads, it will not be possible to use the supplies so deposited, or they may be lost. In these circumstances badly-disciplined troops disperse, but an Army which is not to be daunted by the effects of retreat, and by great privations, will be met by supplies sent forward by the lines of communication, and regain strength to make a further resistance.

The question next arises whether, when acting on the defensive, or during a retreat, it would be justifiable thoroughly to devastate the country in order to hinder the enemy's advance. To carry off or destroy everything in the shape of supplies not wanted by the defenders, to fill in or poison* wells, break up and destroy roads, and withdraw all horses and beasts of burden, might possibly answer the purpose. But what frightful misery would such proceedings entail on the unfortunate inhabitants who would

* For example, with cholera or typhoid germs.

thereby be forced to quit their homes and belongings, and how terribly would such a plan tell against the defenders, should they afterwards be in a position to assume the offensive—and they must always, after all, look forward to doing so when the proper moment arrives! In wars of a purely national character, when the whole nation, driven to exasperation, takes part in the bitterest way in the fighting, such a procedure is possible, and, as happened in the war of 1812, in Russia, may be considered as a noble act of patriotic self-devotion. If, however, the conditions of the case were otherwise, any plan of systematically laying waste a country could only be very partially carried out, and consequently have but slight effect. It is quite possible that, though intended as an effort of lofty patriotism, it might not even produce sufficient effect to prevent it appearing ridiculous!

Any proposal to carry out such measures in one's own country must find an echo in the hearts of the whole nation to a man, if it is to have any kind of moral or physical effect on the enemy commensurate with the sacrifices which it involves.

These remarks must not be taken to apply to such cases as the blowing up of a bridge to prevent the enemy from immediately seizing some important point, or the destruction of the supplies collected in a magazine, which could not be removed, and would therefore fall into the hands of the enemy.

The supply regulations for the German Army are only intended to intimate the goal to be attained, and to serve as a guide. It is not possible to adopt any sealed pattern for the supply of troops in war, but all concerned must act on their own responsibility, as the circumstances of the case require. If the administrative officials are temporarily unable to attend to their duties, owing to ill-health or other causes, they may have to be replaced by combatant officers. Officers of the General Staff would in the first place be called upon, since they are accustomed to deal with difficult questions of the supply of Armies, as they have to consider the feeding of the troops when drafting many of the orders issued by their Generals.

CHAPTER VIII.

MAINTENANCE OF EFFICIENCY.

A. GENERAL.

ATTENTION has already been drawn more than once in the course of this work to the importance of being careful never to take any action which might unnecessarily interfere with the efficiency of the troops. It has been pointed out that troops on the march or in quarters should be spared all hardship and fatigue not absolutely unavoidable on military grounds, and that every opportunity should be given them of having access to their baggage to enable them to make full use of such articles of store as are carried by their regimental transport. But even were such considerations allowed to carry the greatest possible weight, they would never suffice to maintain troops permanently in a state of efficiency. The serious losses in men, horses, and *matériel* that inevitably accompany any kind of warlike undertaking cannot be avoided even by the most judicious arrangements in the employment of troops. Certain organisations consequently become necessary to connect Armies in the field with sources of supply at home, or to utilise the resources of the occupied portion of the enemy's country to keep up a regular and constant supply of such articles as are necessarily expended and to fill the gaps caused by war.

The resources of the enemy's country can, generally speaking, only include such supplies as food, forage, materials for clothing and equipment, and, to a certain extent, draught animals for the supply columns (few remounts for the combatant branches are obtainable). As, moreover, all such supplies, both as regards quantity and quality, must always be of a doubtful

character, any organisation intended to maintain the efficiency of Armies in the field must depend on communications with home being properly maintained. It consequently follows that Armies cannot exist for any time, at any rate, in the field, without uninterrupted communications with their own country. Strategy, therefore, aims as much at covering our own as at severing the enemy's communications. This idea has been carried so far as to lead to the saying that strategy is the art of dealing with the wants of Armies. The definition, though in itself somewhat too narrow, is nevertheless useful in drawing attention to the importance of the subject. Well organised arrangements under this heading facilitate and assist the military command of Armies in the field, as much as a sound tactical organisation and an efficient armament.

During the wars in the early part of last century, main and country roads were the only communications by which the wants of an Army could be permanently supplied, the latter being used to transmit correspondence and the former as the lines of march of reinforcements, trains of ammunition and supplies, and convoys of sick and wounded. Reinforcements of the different arms, marching on the lines of communication, afforded at the same time immediate protection to the roads and points where magazines and "Communications" stations were established. Such a system worked but slowly and clumsily, whilst Armies continued to advance, and the latter were often obliged to check their onward movement to enable reinforcements and supplies to come up. Armies could only, strictly speaking, fill up gaps and make good losses, when halted for a considerable length of time, as, for instance, during an armistice.

Nowadays the communications of Armies in the Field depend mainly on railways and telegraphs. Main and country roads are only used as accessories.

Railway transport is so enormously superior in conveying large masses of men, horses and stores of every description, that it would be impossible to neglect such an important factor. Unfortunately, railway traffic is extremely liable to interruption

of various kinds, and the protection of lines of railroad, when one is opposed to an energetic and enterprising enemy, is, especially in hostile territory, an exceedingly difficult matter. A few determined men provided with such means of destruction as science has of late years produced, can rapidly, and consequently with little risk of being discovered, destroy a line of railroad at certain points to such an extent as to render it unfit for traffic for a very long time. Troops being conveyed by railway are again unable to protect the line, as during the actual journey they are practically powerless. Consequently, it is necessary to detail troops specially for the protection of railroads and communications.

The difficulty in the matter of maintaining a system of "Communications" in constant and uninterrupted working order has been found to be best met by having recourse to the strictest centralisation under the "Inspector-General of Communications and Railways," belonging to the Headquarter Staff of the Commander-in-Chief of the Forces in the Field. To carry on the duties connected with "Communications," he has a staff working under him, and the "Inspectors of Communications," one to every Army or Army Corps acting independently.

The following are also under his orders :—

- The Chief of the Field Railway Service.
- The Director-General of the Military Medical Department.
- The Director-General of Military Telegraphs.
- The Field Postmaster-General.
- The Field Railway Troops.

He must co-operate with the Intendant-General whenever the latter requires the use of the railways for forwarding supplies.

B. LINES OF COMMUNICATION:

The Communications of the Forces in the Field extend from the troops to Army Corps Districts at home, and are confined as far as possible to the railway. The lines of communication of the different Armies or Army Corps acting independently, together

with the districts belonging to, and situated on either side of, them, are fixed by direction of the Commander-in-Chief of the Forces in the Field. When no instructions are issued to the contrary, the authority of the "Communications" Staffs formed on mobilisation extends from the limits of the area actually occupied by the Forces operating in the field to the home frontier, or to the boundaries of such districts of the enemy's country as have been placed under the administration of Governors-General. Beyond the limits thus defined, matters pass into the hands of the authorities at home, or of the Governors-General. The chief duties of the authorities in charge of "Communications" may be said to be :—

1. Forwarding *personnel* and *matériel* of every description from home to the Forces in the Field.

2. Bringing home all men, horses and *matériel* temporarily or permanently sent to the rear, *i.e.*, the sick and wounded, officers and men on command, prisoners of war, superfluous or damaged arms and equipment, trophies, arms and prizes taken from the enemy.

3. Finding quarters and subsistence and otherwise providing for the wants of men and horses either on their way to join the Army or returning from it, so long as they remain in the districts of the "Communications."

4. Protecting and maintaining the lines of communication; maintenance and repair of railways, and construction of temporary lines of rail; maintenance and repair of roads, bridges, telegraph lines, and postal communications; military occupation and defence of all communications, and superintendence of the military police in the districts under their authority.

5. The organisation and administration of the government of the enemy's country occupied, provided such country has not been placed under the orders of a Governor-General.

The Chief of the Field Railway Service has, by making judicious traffic arrangements on the various lines of railway concerned, to do all in his power to assist the working of the "Communications." His assistants are the Military Railway

Directors (for lines in the theatre of war), the Line Commandants (for certain lines at home), the Station Commandants (acting under the orders of the two authorities first named), and finally the Railway Section of the Great General Staff, which takes the place at home of the Railway Section of the Great General Staff in the field, and which controls the Line Commandants and the military traffic on other home lines of railway. These are independent of the "Communications" authorities. By fixing the position of "transfer stations" (*Uebergangs Stationen*) the places where civil or peace traffic ends and military traffic begins are defined. Consequently the limits of authority of the two railway departments referred to are thus known.

The point in an Army Corps District where the lines of communication of an Army Corps begins, or the place on which all trains carrying supplies for the Army Corps in question converge and from which they start, or whence all trains returning diverge (*Etappen Anfangs Ort*), is fixed by the Chief of the Field Railway Service. To provide for the enormous accumulation of men and stores taking place at such a point, the place chosen must be provided with a large railway station well suited for entraining troops and stores, and, together with the immediate neighbourhood, offer great facilities for quartering troops.

The Chief of the Field Railway Service fixes "stations of assembly" (*Sammel Stationen*) or points on which trains coming from the different Army Corps districts converge with a view to being despatched on the different lines to the theatre of war. He also fixes the "transfer stations" above referred to. He fixes, moreover, on every line leading to the area within which the Army is operating, a "terminal station" (*Etappen Hauptort*), or extreme point on the line where military railway traffic ceases, and whence the contents of the various trains arriving are despatched to the different Army Corps, or where *personnel* or *matériel* is collected with a view to being sent home. Beyond this, traffic has to be carried out on the roads of the country.

Whilst the point where the lines of communication of an Army Corps begins, remains stationary, and the "stations

of assembly" and "transfer stations" are only changed in very exceptional circumstances, the "terminal stations," on the other hand, are liable to constant change according as operations progress, or traffic is re-established on lines that have been temporarily rendered useless.

At the "stations of assembly" where the Line Commandants, as a rule, establish their headquarters, depôts of military stores of every description are formed in course of time, since stores of all kinds arriving from the rear cannot always be immediately despatched to the front. Only trains conveying troops or ammunition pass without stopping.

As regards trains containing supplies drawn from magazines established at "stations of assembly," the Intendant-General of the Army gives directions as to the supplies with which the train is to be loaded, and its destination, while the Chief of the Field Railway Service gives instructions as to the despatch of the train. The arrangements made under these heads, which require perfect understanding between the two authorities, must, in the first place, obviate all crowding on the lines of railway—a circumstance soon producing interruption in the traffic—and, on the other hand, must be calculated to meet the actual wants of the Army according to their degree of urgency. All trains coming from the Forces in the Field and returning home should always, if possible, pass the stations of assembly without making a stoppage of any duration.

The Director-General of the Military Medical Department is the central directing authority of the medical department in the theatre of war. His functions will be more clearly defined further on.

The Director-General of Military Telegraphs regulates the whole telegraph service in the theatre of war. The means at his disposal for carrying out the duties of his department have been already referred to in the description of the war formation of the German Army.

He is under the orders of the Chief of the General Staff and of the Quartermaster-General as far as concerns the field telegraphs

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in the area within which the Army is operating. He is under the Inspector-General of Communications and Railways as far as concerns the telegraphs of the lines of communication.

His duty is so to arrange the connections of the field telegraphs that communication is always maintained between the various parts of the Army and with home by connecting with the Imperial or State telegraph system. He is further responsible for reinforcements of telegraph *personnel* and for supply of *matériel*. He directly controls the Army Telegraph Detachments with the Great Headquarters and the lines of communication telegraph system. The other telegraph detachments are only under his orders as regards technical details.

The Field Postmaster-General is responsible for the maintenance and working of postal communications in the theatre of war, and sees that the duties in the various field post-offices are efficiently performed. While all field postmasters, post-offices and stations are under his orders, he has himself to conform in all matters of a technical postal nature to the directions of the General Post Office.

The above may be taken as a brief description of the various central authorities of the "Communications" service belonging to the Headquarter Staff of the Commander-in-Chief, and it now only remains to examine the "Communications" service of an Army or an Army Corps acting independently.

This is placed under an Inspector of "Communications" who, on the one hand, is responsible to the Inspector-General of "Communications" and Railways, and on the other to the General commanding the Army, or Army Corps acting independently.

The Inspectorships of "Communications" should be formed as early in the campaign as possible, indeed their existence, even when the Army is engaged in its strategical concentration, is required for the establishment of magazines. The Inspector of "Communications" has, in fact, to see that the Army is properly supplied at all time and places, foresee what it may probably want, protect its communications and rear, cause all

that it requires to be conveyed to it without hitch or hindrance, and similarly remove all that is useless or an encumbrance. For such purposes he must be constantly instructed by the General commanding the Army as to the movements and employment of the various forces and bodies of troops, and informed as early as is practicable of all orders drawn up and plans of operations contemplated. With a view to enabling him to forward reinforcements and stores, the whereabouts of the different units—down, to, say, the regiment or body of corresponding strength—must be constantly communicated to him. He must take care that he is in constant personal communication with the General commanding the Army, and establish his headquarters as near the latter as the exigencies of his department permit. The Generals commanding Army Corps and independent Divisions must be kept informed by him, either directly or through the General commanding the Army, of the position of the "Communications" terminal station, the roads leading therefrom, and the places where "Communications" hospitals and depôts for sick or spare horses are established.

Inspectors of Communications fix the roads to be used as communications, and establish stations (with the exception of the terminal stations) about one day's march apart on roads or waterways and arrange for the magazines and hospitals to be established in them. They regulate the traffic on any field railway lines which may be laid down, and on the roads and waterways, and are responsible for the protection of the communications.

The Inspector of Communications appoints Communication Commandants both at the terminal stations, and at all important railway stations, and lines of communication posts. The Commandants arrange with the military authorities for the traffic leaving their stations, direct the transfer from railway to road communications, and assist the lines of communication Intendants in collecting supplies; they control the Field Police and arrange for the security of traffic.

Some of the communication troops at the disposal of the Inspector of Communications are used to garrison the most

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important stations, but the greater part are kept concentrated. They have to arrange for the security of the communications by careful reconnaissance and a good intelligence service, as well as by means of small flying columns. Permanently-occupied stations should be fortified, and abundantly provided with all requirements. Any insubordination either on the part of followers of the Army or of the population should be severely punished. A Judge-Advocate assists the Inspector of Communications in all legal matters.

The Communications Intendant stands in the same position to the Inspector as the Corps Intendant does to the General commanding the Army Corps. He controls the despatch of the supplies allotted to the Army in accordance with the instructions of the Inspector and of the Army Intendant. He utilises the resources of the communications area and keeps supplies in readiness for the use of the Army. He also directs the establishment of small magazines at the lines of communication stations for the lines of communication troops, and keeps them filled. Large magazines, cattle dépôts and bakeries will be established for the Army at selected points, so that the Communications Intendant can meet the requirements of the Army Intendant at any time. Particular care must be taken with the forwarding of supplies from the terminal stations to the Army. The magazines must always be near enough to the Army for the supply column to be able to reach them. The constant supply of the Army with bread stuffs and forage is of the greatest importance. If there is no railway available, traction engines, motor lorries, or horse trams may be of service. If the Army is at too great a distance from the terminal station, the communication transport columns must, with assistance from the Army transport columns, form the nucleus for the necessary transport. Connection may be permanently maintained by requisitioning, hiring or purchasing transport. When the Army is halted the Communication Intendant at once arranges for a uniform system of traffic. During a retreat abundant supplies will be deposited at many places on the roads that will most probably be used. If railway

troops are placed under the Inspector of Communications as an exceptional measure, he will usually attach them to the Construction Department. The Inspector of Communications arranges also for the replenishment of the Ammunition Columns in accordance with the instructions of the General commanding the Army.

The Director of the Medical Department for Communications sees to the *personnel* and *matériel* necessary for establishing communications hospitals, relieving field hospitals by the establishment of permanent military hospitals, and evacuating the sick and wounded to the rear.

The Army Postmaster has charge of all postal arrangements of the Army, including post-offices, horses and carriages.

The Director of Communications Telegraphs has to see to the connection of the field telegraphs with the home system and to the maintenance of telegraphic communication in the districts comprised in the lines of communication.

Traffic on waterways will generally be confined to the transport of supplies, ammunition, *matériel* of all kinds, and of sick and wounded. Since boats travel comparatively slowly, waterways will chiefly be used when the Army is halted. Temporary checks, due to low water or ice, must be taken into consideration. The size of the boats depends upon the character of the waterway, its depth and the capacity of the locks. For transport of goods in bulk large hold capacity is advantageous. The capacity of boats on canals and rivers of average size is from 100 to 200 tons. When the depth of water varies it is not safe to reckon on more than 50 tons. Unloading is a comparatively simple matter in canals, but special preparations are necessary on rivers where there are no quays. Labour and transport should be kept in readiness at the unloading places for the despatch of stores, if storehouses are not available for the reception of the goods before they are damaged. The unloading of an average boat (100 to 200 tons) takes from two to four days.

The use of motor-lorries is for the present limited to the lines of communication, where breakdowns are not so serious as they

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would be with the fighting troops. The chief advantage of motor transport lies in the economy of *personnel* and horses. In 1870-71 want of horses caused great difficulties in the supply of the Army. Since that date the Army has been greatly increased and the requirements of the mobile troops in horses have grown, while the supply of serviceable horses has not kept pace with the increase. It is therefore much to be desired that motor transport, which is not yet quite satisfactory, should be further improved.

C. THE MEDICAL DEPARTMENT.

Modern wars, notwithstanding the increase in the numerical strength of Armies, show very great improvement in the medical care of the soldier. The great strides which have been made in surgical and medical science have, of course, very materially contributed to bring about such results, but it is nevertheless impossible, without the assistance of efficient and extensive military organisation, to expect science and skill alone to attain the ends desired.

The soldier on active service cannot in the first place devote the same care and attention to his health as can a private individual living under favourable conditions at home. In certain circumstances he is called upon to make efforts, undergo privations and hardships and face the elements to such an extent that the strongest alone are able to bear the strain. But these are not the only causes of sickness. Soldiers fall sick at times *en masse*, and sicknesses of this description often degenerate into epidemics attacking even those who would otherwise be able to bear all the hardships of a campaign. In such circumstances it is impossible to give the sick soldier the same medical attention and care as can be given in garrison hospitals at home. The difficulties to be contended with are even greater when, after a victorious battle, the conquerors find enormous numbers of wounded men of both sides left on their hands.

On occasions of the kind the sympathy felt for the sufferings of our fellow-creatures would make us wish to provide immediate

succour and the most careful treatment for every soldier who has fallen wounded on the field of battle in the service of his country. The complete fulfilment of this wish would, however, make such demands on the available medical *personnel* as would be impossible to meet, and would render necessary an enormous amount of transport and hospital stores, which would hopelessly hamper the movements of Armies in ordinary circumstances, and would probably not be on the spot in sufficient quantity when required. The organisation of the military medical service in time of war is, consequently, based on a compromise between what is desirable and what is practicable; and the meaning of the latter expression may, it is unnecessary to add, be variously interpreted.

Time has shown, in fact, that we have succeeded in approaching very nearly the limit of what is practicable. This may be inferred from the details that have been given on the medical service of a mobilised German Army Corps, in the chapter devoted to the war formation of the German Army. There being then no doubt that this organisation is insufficient to meet the requirements of masses of sick and wounded men, and moreover that it must follow the Army everywhere in its movements so as to be constantly at hand when required, attempts have been made to improve matters by calling in the assistance of Societies for Aid to the Sick and Wounded in War, and connecting the system with the "Communications," thus facilitating intercourse with home.

In the first place the "Communications" enable such field hospitals as have been established to be relieved. For this purpose the Inspector of "Communications" has at his disposal certain hospital *personnel* and depôts of reserve hospital stores. The new hospitals, which would be formed with these, would be styled "Fixed Military Hospitals" and, with the Hospitals of "Communications" specially established, would be under the Inspector of "Communications." The latter is represented in the medical service by a Surgeon-General of "Communications" and the Directors of Field Hospitals are under him (one for each Army Corps, forming part of an Army).

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The "Communications" have again to attend to the sending home of all the sick and wounded who can be moved. The Director-General of the Military Medical Department has for such purposes at his disposal a number of specially arranged hospital trains. By arrangement with the chief of the Field Railway Service he has these brought forward, and, as in the case of trains conveying invalids home, has them despatched to points where "Commissions for the Transport of the Sick," established for the purpose of distributing invalids, cause the sick and wounded to be conveyed to various military hospitals established at home.

This system of evacuating the sick forms the basis of the entire military medical service in the field. It not only enables field and fixed hospitals to be ready again for use with the troops in the field in the shortest possible time, but is calculated to prevent a great accumulation of sick and wounded at any particular place—a circumstance always to be avoided. It ensures, moreover, better medical treatment and greater comfort for patients in hospitals removed from the scene of hostilities, and well provided with the necessary *personnel* and appliances.

The Imperial Commissioner and Military Inspector of "the Society for Aid to the Sick and Wounded in War" is the chief of the volunteer medical organisations in the theatre of war; further control is in the hands of delegates on the lines of communication. To every inspectorship of communications are attached: (a) Hospital *personnel* for the military hospitals, orderlies for sick and wounded, and personnel for rest and refreshment stations for the wounded; (b) forwarding *personnel*, immediately attached to the Reserve Dépôt hospitals, to maintain communication between the advanced hospitals and the terminal station; (c) dépôt *personnel*, for the administration of the stores of the volunteer medical organisations, at the terminal and collecting stations.

The Surgeon-General of the lines of communication gives the delegates at his disposal their instructions, and arranges for co-operation between the volunteer and military medical services. All members of volunteer medical organisations in the

theatre of war are under martial law. They wear the red cross as a distinguishing mark and are under its protection.

Depôts for sick horses are established on the roads of "Communications," by order of the Inspector as circumstances require, for the reception of sick horses, and of such horses as are no longer required by the troops and cannot accompany the horse depôts of the Army Corps. The veterinary *personnel* for these is appointed by the acting commissariat authorities at home, on application of the Inspector of "Communications," by engaging civil veterinary surgeons.

D. REINFORCEMENTS AND REMOUNTS.

On war being declared, the depôts, or troops that take the place at home of those which have left for the front, are at once mobilised. Steps are at the same time taken for ensuring their numbers being permanently maintained throughout the campaign, so that the losses in men and horses, which may, according to past experience, be expected in the ranks of the forces in the field, may be sufficiently provided for by them.

When troops have suffered any very severe losses, these may be made good by reinforcements from other depôts as well as from their own. As a rule, reinforcements are forwarded to the troops in the field by their own depôts, on a proper demand being made from the former direct to the latter.

Reinforcements, both mounted and dismounted, are sent from home fully armed and equipped, including ammunition and "iron rations." The necessary railway transport is provided at the point where the lines of communication of the Army Corps concerned begins, as soon as trains can be made up by the Line Commandant to suit the various detachments, on a proper intimation being sent him by the officer acting as substitute for the General commanding the Army Corps. The transport of reinforcements thence to the "terminal station" and their further despatch to the units which they are to join, are matters for the authorities in charge of "Communications."

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Reinforcements of Army Service Corps soldiers for the various staffs and administrative departments are obtained through the officer commanding Army Service Corps. Horses required by these, as well as by the infantry, rifles, and Engineers, are supplied by the remount dépôt of a mobilised Army Corps, which may be used to supply any very pressing wants of the other arms.

E. SUPPLY OF ARMS AND AMMUNITION.

A supply of small arms is very rarely required by troops in the field, the number of men becoming non-effective generally exceeding the number of small arms rendered unfit for use. Repairs, unless on a large scale, can be undertaken by the regimental armourers. The necessary information as to the ammunition reserves with the troops is contained in F.S. Regns. 476-495.

The Inspector of Communications arranges for refilling the empty ammunition columns (including those of the heavy Artillery) in accordance with instructions from Army Head Quarters. The Commander of the Ammunition Park, the Lines of Communication Ammunition Columns, and the Ammunition Supply Staff and Dépôts are at his disposal for this purpose. The Commander of the Ammunition Park obtains the necessary ammunition through the Ammunition Staff at the stations of assembly, and arranges for it to be forwarded from the Terminal station to the dépôts or to the troops. He uses the Lines of Communication ammunition columns for this, which can carry artillery stores and explosives as well as ammunition.

By using the above system of supply, in *echelons*, so to speak, the different formations for providing and conveying supplies of ammunition were classed according to their degree of mobility, and a constant supply was ensured.

The ammunition columns belonging to, and forming part of, a mobilised Army Corps are organised so as to be always able to follow the movements of the latter. They are provided with a number of carbines to protect them from small parties of the enemy. The columns of the Lines of Communication Ammuni-

tion Parks are provided with rifles and carbines, and being closely connected with the "communications" as they advance, are protected at the same time with them. As a rule they are conveyed by rail, but provision is made for a certain number of teams, so that they can gradually take to the roads, and so establish intermediate depôts of ammunition between the "terminal station" and the troops. If teams could be requisitioned in sufficient numbers, all the columns could indeed, in time, take to the roads, as the ammunition is by regulation packed in ammunition wagons. Field railways and waterways, if available, would also be used.

The Chief Ammunition Depôts are situated at the stations of assembly, and are under the Ordnance staff. From these, ammunition packed in boxes is forwarded as required by rail to the places where the columns of the Field Ammunition Parks are halted, or to some point whence it can be fetched by the empty wagons of these columns.

Finally, ammunition must be unceasingly made up at home in the Artillery Depôts, and from these the Chief Ammunition Depôts kept constantly supplied as fast as they are exhausted.

F. SUPPLY OF CLOTHING AND EQUIPMENT.

As regards the loss and wear and tear of articles of clothing, and accoutrements in the field, the observation made, when dealing with the question of the expenditure of small arms, may be said to apply to a certain extent, inasmuch as the loss in men is greater than that in articles of clothing and accoutrements. In the matter of clothing, however, there is a difficulty in meeting the wants of troops in the field by supplying one man with what belongs to another, especially as regards boots, which can rarely be made interchangeable. Again, whereas a sick or wounded soldier no longer requires his arms, he must be allowed to retain his clothing.

The supply of articles of clothing to troops in the field is limited in the main, so far as the troops themselves are concerned, to

what is carried in reserve by the regimental transport, and this can only be very rarely and inadequately supplemented by the requisition of boots in the enemy's country. In a certain time the clothing will be so completely worn out that large supplies must be sent to replace it from home.

The making up and despatch of clothing is the business of the *depôt* troops at home, and the tailors and shoemakers belonging to these have to work incessantly to supply the wants of the Army in this respect.

Troops in the field make demands for such stores of clothing as they require, direct to their respective *depôt* troops at home, and the latter complete and forward the order for transport to the front, through the officer acting at home as substitute for the General commanding the Army Corps. The transport of such stores to the "terminal station" is a matter for the authorities in charge of "Communications." From this point they are either fetched by the troops for whom they are intended, or else are conveyed to the latter under charge of any reinforcements that may happen to be joining.

Accoutrements are similarly supplied when wanted, but these, when the effectives of an Army begin to diminish, are soon found to be in excess of what is required, being more readily transferable than articles of clothing, and, as a rule, lasting much longer.

CHAPTER IX.

DEALINGS WITH THE ENEMY.

THE operations of war occasionally lead to—and invariably end in—a proposal from one at least of the belligerents for a suspension or for a final cessation of hostilities. If it be a question of a *general* cessation of hostilities, political considerations, as a rule, go hand-in-hand with military negotiations, and the former, which are the business of diplomatists, may affect even the purely military part of the negotiations. The *local* cessation of hostilities has nothing to do with diplomacy, and is an entirely military question.

Dealings of this description with the enemy are almost invariably carried on by officers of the General Staff. On such occasions it is a question of turning the actual existing situation—be it an advantageous or disadvantageous one—to the very best account. To do this effectually, every endeavour must be made skilfully to conceal our own weak points from the enemy, and at the same time to turn any known weak points of the enemy to our advantage. But though to be perfectly open and candid is out of place when dealing with an adversary, an officer must not be expected, on the other hand, knowingly to state what is false even to an enemy. If the latter, however, shows on his own account that he is under certain false impressions, there is no necessity to dispel his illusions by statements which might possibly expose weak points on our side. Still more out of place is any feeling of generosity aroused by the misfortunes of an enemy. Gratitude and friendship are sentiments that must never for a moment be taken into consideration.

The *military* success must be turned to the best possible account. In striving to attain this, it may be becoming

to pay every formal honour to a gallant enemy, provided the honours that belong to the victor, according to the usage and custom of war, be not thereby diminished. Otherwise offence would be given to the feelings of our own Army. The profit to be derived from a victory won cannot be placed at too high a figure. This idea is at once forced on us if we consider the sacrifices our Army has been called upon to make. To call upon the latter again to make similar sacrifices owing to false ideas of humanity or mistaken notions of chivalry, would be to offend against that clearness of judgment which should never for a moment be sacrificed in our dealings with the enemy.

The negotiations which take place generally end in the drawing up of a written agreement. This should admit of no doubt as regards the range of concessions obtained or engagements entered into. For the honourable fulfilment of the former, every possible measure of security must be taken. This, in many cases, merely consists in having the means at hand of compelling their fulfilment by force, and making any compliance on our side dependent on the previous fulfilment, on the enemy's side, of the terms that have been accepted.

Negotiations with an enemy may be affected by a great variety of considerations. It is consequently impossible to lay down hard-and-fast rules for drawing up a convention with an enemy. It is only practicable to call attention to certain points deserving notice in drawing up the terms of an armistice or a capitulation.

Negotiations for an armistice have for their object the temporary separation of belligerents, but with an understanding that, unless peace be concluded in the meanwhile, hostilities are to be resumed. The first question to be decided then is to determine a line of demarcation or, better still, a neutral zone which is not to be crossed, or entered on, by either side. The breadth of such a neutral zone may, in the case of active operations in the field, be some one or two days' march in breadth; but in the case of a blockaded or besieged fortress, it should be drawn within the narrowest limits. In the case of a line of demarcation or a line fixing the limit of a neutral zone, communications

such as a line of railway or a high road should never be chosen, but rather a line which in itself constitutes a natural obstacle and can only be crossed at certain points. Outpost duties are thereby much simplified, and these, it may be remarked, must never for a moment be relaxed along the front, during the whole armistice. Experience has shown that in spite of conventions which have been agreed to, attacks, either the result of indiscipline or misunderstanding, or which have been treacherously planned, must always be guarded against. These would be sure to entail very severe losses on the side which carelessly allowed itself to be surprised.

Negotiations for an armistice must also fix the period for which it is to last, or the notice that must be given before it can be broken off. In calculating these, the questions of the possibility of or facilities for reinforcing and re-establishing the Army, the quarters it would occupy during the armistice, and finally the positions which it would have to take up on the latter being broken off, are the main points deserving consideration. Whether besieged or invested fortresses are to be allowed to revictual for a period corresponding to the length of the armistice, is a question that must be specially decided. At any rate, it is advisable never to agree to conditions the fulfilment of which cannot be easily watched and enforced. A convention for an armistice should therefore be given the simplest possible form.

Negotiations for a capitulation start from the assumption that one side can offer no further resistance. Whether this is actually the case, is a question to be decided solely by the party that is about to capitulate. Only in very rare cases, excepting of course when military considerations have to give way to political exigencies, can a capitulation be justified when there is still any fighting strength left. The question would then arise whether it would be in the interest of the opposite side to meet any proposal for a capitulation considered premature from a military point of view, by granting better conditions. Otherwise the surrender of the enemy's forces as prisoners of war, and the delivery of all arms

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and military *matériel* should always be insisted on. The conditions of the surrender must be carefully drawn up as regards time and place, and their punctual fulfilment ensured by the presence of a sufficient force. In the case of the capitulation of a fortress, the outlying and detached works should first be taken possession of, and next the gates of the *enceinte*. After the garrison has marched out, been disarmed, and surrendered as prisoners of war, the powder magazines should be taken over, and then the place occupied.

An officer of the General Staff sent to negotiate with the enemy, should be fully instructed by the General in command on the spot as to the conditions he must *at least* insist on, and the concessions he may *at the most* make. To obtain more advantageous conditions than were contemplated is, of course, perfectly admissible, but less advantageous terms must never be agreed to without first obtaining the necessary authority. It must always depend on the general military situation at the moment, whether negotiations should in such case be simply broken off on the spot, or a proposal made to prolong them to await further instructions. The latter is invariably the course to be pursued when to gain time is of itself an advantage.

A convention drawn up by an officer of the General Staff is, as a rule, only complete when approved of by the General in command. But it is as annoying to the latter as to the General Staff officer himself, if such approval cannot be given. This makes it all the more necessary for the General Staff officer to be as thoroughly informed as possible on all the circumstances of the case. In doubtful cases he should ask for further instructions; these might be communicated to him through an officer who had accompanied him to the spot.

By the usages of civilised warfare, officers engaged in negotiations with the enemy (*parlementaires*) are guaranteed security to their persons within the enemy's lines. If facts have shown that this right has not been always observed, inasmuch as officers accompanied by the conventional signals (a trumpeter sounding and a white flag unfolded) have been occasionally fired on, the

fault may generally be traced to unruliness on the part of soldiers caused by intense national animosity, or to ignorance on the part of officers or men on the subject.

The security which, however, may be said, as a general rule, to be guaranteed to an officer bearing a flag of truce, renders it a matter of duty on his part carefully to keep within the bounds of the mission on which he is engaged. This should always be considered as solely directed to the General commanding the forces of the enemy on the spot. Consequently, the officer protected by the flag of truce should avoid any misuse of the immunity to danger thus enjoyed among the enemy's troops. Otherwise he would, by his own act, at once put himself beyond the protection afforded him by the usage of civilised warfare, and must expect to be ruthlessly treated as an enemy. To prevent an officer bearing a flag of truce from unavoidably observing the position of the enemy's forces, the enemy has a right to insist on his being blindfolded.

There is no necessity whatever for unwillingly receiving a flag of truce. For instance, the commandant of a besieged fortress, determined to hold out to the last, would act wisely in refusing to receive all flags of truce, or at the most in confining all correspondence with the enemy to written communications transmitted through the outposts. Similarly, during active operations in the field, all officers with flags of truce should be stopped at the outposts and there detained until further orders. Circumstances must, on such occasions, decide whether they are to be simply turned back, whether negotiations are to be entered into with them in the line of outposts, or whether they are to be conducted, with the necessary precautions, to the headquarters of the Division or Army Corps.

An officer of the enemy's forces who, bearing a flag of truce, directly addresses troops and summons them to surrender, instead of addressing the officer in command, should be instantly shot down,

CHAPTER X.

THE CO-OPERATION OF THE ARMY AND NAVY IN WAR.

IN the wars which preceded the foundation of the German Empire the Prussian Fleet was too weak to co-operate effectively with the Army, or to exercise any decisive influence; but the want of a strong Navy was often bitterly felt. Since then the German sea power has been steadily increased, with the object of making it fit for the duties which fall to it in peace and war. Its further development is in progress.

To co-operate effectively, the Army and the Navy must have a common objective, the rapid destruction of the enemy's forces. It will depend upon the strength of the enemy's land and sea forces and the position of his country and its frontiers relatively to our own, whether this destruction can be carried out chiefly by the Army or by the Navy. In a struggle with a great Power, in which our national existence is at stake, every available source of strength must be systematically employed from the outset. The Fleet can unassisted compel small States beyond the seas to observe the principles of International Law, and to carry out their duties, by bombarding coast towns or by landing crews and Marine Infantry, and occupying harbours. But if more important countries have to be dealt with the Fleet will not be able to carry out its duties without the assistance of an expeditionary force from the Army, if the enemy offers a stout resistance or retires inland.

It is impossible in this work to go into the great influence which the mutual co-operation of the Army and Navy have exercised from ancient times; it is sufficient to refer to the fact that States which have lost their fleets in Naval engagements, or which possess no Navy, have very soon found it difficult to continue the struggle

with their whole strength, when the enemy was in undisputed command of the sea and could prevent the transport by sea of war *matériel* of all kinds. This fact is therefore of importance for every future great war. The seizure of war *matériel* will be extended in accordance with the interpretation of so-called International Law favoured by the stronger Power, to raw *matériel*, coal and foodstuffs, which will be treated, even when in neutral bottoms, as contraband of war. Since almost all highly-civilised countries are dependent upon constant importation of food-stuffs by sea, a country which has lost its sea-borne trade will soon find itself in the position of a besieged fortress, to compel the surrender of which any means may be used, even starvation. If the supply of food-stuffs fails, the operations of an Army acting on the defensive in its own country are affected equally with those of an Army which has advanced victoriously into the enemy's territory, for the latter is dependent, to a great extent, upon supplies forwarded from home, even when every use is made of the resources of the theatre of war.

The duties which the Navy has to carry out in co-operation with the Army are partly strategic and partly tactical. But while the strategic co-operation continues throughout the whole campaign until the enemy has been completely overthrown, the tactical combination of the two forces is usually only temporary, though at times of the utmost importance. The first strategic duty of the Fleet is to gain command of the sea. If the Fleet is in a condition to deal with the enemy, it will seek a decisive engagement, or will blockade the enemy in his harbours. If it is not strong enough for this, it will, if the object of the campaign requires it, employ all its strength to render the enemy immobile. In certain circumstances the advantage of gaining the command in some portion of the sea at least for a time, and thereby making possible the transport of troops by sea, may justify the loss of our own fleet.

How far the Fleet will be able to interfere directly with the enemy's movements, to shield our coasts from hostile enterprises and to protect our commerce, depends essentially upon the degree

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in which it has been successful in gaining and maintaining the command of the sea on a larger or a smaller scale.

A fleet which endeavoured to carry out its duties by destroying the enemy's commerce without considering the general situation would violate the most important principle of strategy—that the main force should be kept concentrated to deal with the most dangerous opponent. No single ship should be withdrawn from its chief duty—the defeat of the hostile Fleet. After this duty has been fulfilled and the command of the sea been won the Fleet can be employed on any further enterprise.

In order that the whole undivided strength of the Fleet may be successfully employed in the destruction of the enemy and in defending our coasts, it is necessary that the Army and the Navy should have a common Commander-in-Chief, whom the German Empire possesses in His Majesty the Emperor. The Navy, as well as the Army, must receive its instructions from the great headquarters, and this will be taken into consideration in the composition of the latter.

The tactical employment of the Fleet may vary considerably, according as it is employed in a naval battle, in supporting or preventing a landing, or in the attack or defence of coast fortresses. The employment of the Fleet independently—that is to say, when none of the land forces are immediately co-operating with it, as, for example, in a naval battle—is beyond the scope of this work and will not be discussed here.

In every operation in which the Navy and the Army are both engaged, one Commander-in-Chief is necessary to ensure effective co-operation. The chief command may be exercised either by a General or an Admiral, according as decisive results may be expected by land or sea.

If the preponderating force is employed on land and the decisive engagement is to be fought out there, the naval force will be chiefly employed in protecting the communications of the troops on shore. If the latter, however, are to carry out duties subordinate to the naval operations—for example, to co-operate in the capture of an enemy's naval base—they must be subordinated

to the requirements of the Fleet. In either case the auxiliary force must be under the same command as the main force.

The disadvantage of having one command lies in the difficulty of the effective control by one man of two such distinct forces as the Army and the Navy. This difficulty will be lessened if the Staffs of the landing troops, and of the Fleet, as well as that of the officer in chief command, are composed of both military and naval officers, and it will be still more readily overcome if the Commander-in-Chief allows the various parts of his force full freedom in carrying out their special duties, while himself retaining the responsibility for the success of the whole enterprise. When an Admiral is in chief command, for instance, he will not usually feel himself called upon to command the troops during an engagement, any more than a General would interfere with naval orders during a sea voyage or disembarkation, or would issue detailed orders as to the manner in which the Fleet should co-operate with an engagement on shore. It will always be the exception for ships' companies and naval guns to be landed and to fight ashore. The landing of a strong naval detachment weakens the efficiency of the Fleet, and makes it immobile and defenceless in its own special rôle—the naval battle. Such a measure is only justified to assist the land forces temporarily after the enemy's fleet has been defeated.

Men-of-war will usually only co-operate in an engagement ashore, *i.e.*, during a battle on the coast, or the landing of detachments from the Army on a hostile coast, by means of gun-fire from ship board as far as the depth of water and the formation of the coast may allow. Flat coasts make it difficult for ships of deep draft to stand in; cliffs limit the view and power of observation; in a rough sea shooting from on board ship is usually ineffective. It is quite impossible for troops on transports to take part in a naval engagement. A troopship, now that the days of boarding are over, is quite defenceless when opposed to a modern man-of-war, which can sink it without difficulty. Troopships must therefore keep outside the range of an enemy's guns or torpedoes. For this reason it is very inadvisable that a

fleet of transports should be escorted by the battle fleet to protect it against the enemy's ships. A naval engagement under these conditions would be the more serious, as the battle fleet would be deprived of its freedom of manœuvre by the fleet of transports. The decisive naval engagement must be fought out by the battle fleet alone. The transport of troops is a very risky enterprise if the command of the sea has not been gained, even when the troopships are escorted by a fleet which is superior to the enemy's ships.

Further, it is necessary to be clear upon the point that any landing on an open coast is so dependent upon the weather, that the attempt may not only be undesirably delayed, but may even have to be given up altogether. Only the impossibility of using a harbour can justify landing on an open coast.

The most important requirements for carrying out a landing on a large scale are : shelter from the wind, good anchorage, smooth water, small rise and fall of tide, and waters clear of obstacles or mines. It is a great advantage if a large number of ships can be brought alongside landing places or quays at the same time, or if horses and vehicles at least can be disembarked without the use of lighters or flat-bottomed boats.

The following points are of military importance : the point of landing should be covered from the view and fire of the enemy ; there should be suitable points for bases on the coast after a landing has been effected, and a good covering position for the landing troops, *e.g.*, a peninsula.

The troops must be made acquainted with the method of carrying out the disembarkation, and instructed how to behave in the boats ; and they must be exercised in this in peace.

The tactical carrying out of a landing on a coast occupied by the enemy is, in the first instance, the duty of the infantry, who may be effectively supported by naval detachments with machine and swivel guns. In certain circumstances the men-of-war will co-operate with their fire. There is little advantage in the infantry firing from the boats ; they must seek to gain the shore and land as quickly as possible. The disembarkation of the

mounted arms can only be begun when this is completed. The latter will usually be comparatively weak owing to the difficulty of transporting horses by sea. For the same reason and owing to want of space, the landing troops will have little transport.

The positions gained on shore must be at once strengthened and protected against counter attack. It may be desirable in a surprise landing for the ships to reach the coast at night without lights, and to make all the preparations in the dark to begin the enterprise at dawn. The quicker the disembarkation can be carried out the less chance there is of its being observed and disturbed by the enemy; it must therefore be carried out in accordance with a well-matured plan, and after a careful reconnaissance of the landing place.

If re-embarkation should be necessary, the above steps will be carried out in the reverse order. If it is not necessary to abandon stores, owing to pressure from the enemy, they will be loaded first. The vehicles, guns and horses will come next, and the infantry last. The latter must keep off the enemy as long as possible, assisted by the Fleet.

The landing of a large force will, as has already been explained, be usually only attempted by the side which has gained the command of the sea to a greater or less extent. The defender's fleet must, therefore, either be defeated in a naval battle, or blockaded in its harbours. But even a blockaded fleet can make itself very unpleasant to, or seriously threaten the attacking fleet, by surprising the latter, which has to lie outside in the open sea, at an unfavourable moment, *e.g.*, when part of the fleet is coaling. Heavy coast defence guns, torpedo boats, obstacles formed by anchored mines or sunken ships, can always assure the retreat of a blockaded fleet operating in well known waters, under the protection of coast fortresses, even if it does not succeed in breaking out.

Although an inferior fleet will not be able altogether to prevent hostile landings in the long run, still it will be able to discover and report the probable direction of the enemy's movements by means

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of fast cruisers. Numerous coastguard stations, connected with each other, can prepare the way for the repulse of a landing, by reporting the approach of a hostile fleet to the troops allotted to coast defence. The telegraph and railways make it possible to concentrate large bodies of troops at the threatened point, for even after the whole of the mobilised Army has left the country, there will be a strong force of reserve and garrison troops left behind.

If it has been possible to anticipate the enemy and to prevent him setting foot on shore, the defence must be conducted with all the more energy. But if, on the other hand, the enemy has landed in strength and is already in a covered position, it may be advisable to wait until he begins his march inland and then to attack him and drive him from his line of retreat. No force is more sensitive about its communications than a landing force; it has no broad base upon which it can fall back, but must retire upon a single point—its landing place.

The defender's fleet, even when it has been unable to prevent a landing, must make itself constantly felt. If it is unable to cope with the enemy in battle in the open sea, it can keep him in uncertainty, and divert attention to itself by means of night enterprises, such as torpedo attacks. If the enemy's landing force is compelled to re-embark, an opportunity for bold enterprise is afforded even to a weak fleet. If the re-embarkation of a beaten and hard-pressed force is interrupted or prevented, the latter must with certainty be destroyed.

Since the heavy shell of a fleet are chiefly designed to penetrate armour and are very expensive, and the guns can only fire a comparatively small number of loaded shell in consequence of the strain upon the bore, an attack upon a modern coast fortress by men-of-war has comparatively little effect, and the necessary expenditure of ammunition is only justifiable in exceptional circumstances. Battleships are not provided with guns which can employ high-angle fire, therefore they cannot destroy the interior of strong works. The Fleet, therefore, usually requires the support of detachments from the Army in an attack on coast

fortresses. The landing troops can co-operate successfully with the Fleet by employing high-angle fire.

A fleet should only seek refuge in a coast fortress and allow itself to be shut up in a harbour in a case of the direst necessity, just as an Army should never voluntarily retire into a fortress. All available ships must remain as long as possible on the high seas, and only return to harbour to coal and repair damages. But if the remnants of a defeated fleet are obliged to seek refuge in a fortified harbour they will not be able to leave it again, for the attempt to pass through the narrow exit of a harbour, in face of an enemy lying outside on a broad front, would be disastrous. They must then assist in the defence of the coast fortress in every possible way,

CHAPTER XI.

THE DUTIES OF THE GENERAL STAFF IN THE COLONIES AND IN
OVER-SEA EXPEDITIONS.

It is not proposed in this chapter to attempt any exhaustive description of the special services required of troops in countries beyond the seas. This must be left to those who are qualified by personal experience; also, the space available in this book is limited. Therefore, in choosing the title "Duties of the General Staff," it was intended to convey that this chapter would only be concerned with such suggestions and discussions as would present themselves to the staff of a Commander in the Colonies, when preparing for, or conducting, an expedition, and that the duties of the troops as such would only be lightly touched on.

The strategical and tactical principles laid down in the service regulations of the German Army, as the result of the experience of great campaigns, are also to a certain extent applicable to the conduct of war in the Colonies, and to over-sea expeditions. The wide scope and the absence of any hard-and-fast rules in the Field Service Regulations permit a Commander in any given case to depart from the forms described therein and to adopt whatever means may appear most practical.

The special conditions under which savage or half-civilised peoples live will frequently justify measures which would be exceptional in European warfare. The success of future expeditions to a great extent depend upon a knowledge of the climate, the character of the country, its cultivation, on the experience gained in long intercourse with the inhabitants in peace and war and upon a correct appreciation of the ascertained facts.

In considering the climate in hot countries, it will be found that the dangerous fevers which are prevalent

and the damp, enervating heat, have a deadly effect upon European troops. It is therefore necessary to traverse unhealthy strips of coast and swamps as quickly as possible, and to take the most stringent sanitary precautions, such as forbidding the troops to drink water that has not been boiled, in order to protect the men from sickness. Marches in the heat of the day should be avoided, and therefore night marches must frequently be made, in spite of their attendant disadvantages. The changes in the temperature by day and by night necessitate suitable clothing and equipment. A European requires a considerable degree of comfort if he is to be kept fit for active work in the tropics, which necessitates what would be considered at home a relatively large amount of transport. Servants for the officers and bearers for the baggage must be selected from the natives, or from races accustomed to tropical conditions. The fighting troops will also frequently be formed from the same material. The officers must, however, always be men of white races, for natives should never be put in a position of authority over Europeans. Frequent changes of Commanders should be avoided as much as possible. The way to handle natives can only be learnt by experience. Still, coloured troops, trained on the European model and commanded by white officers, will never be entirely satisfactory, for they lack the quality of bulldog pluck, and will usually only fight against their fellow-countrymen under compulsion.

Punitive expeditions composed entirely of white troops must therefore occasionally be employed regardless of the unhealthiness of the climate. In such a case the losses from sickness are usually very great in spite of the most careful sanitary precautions. For this reason military operations in the tropics are confined to certain relatively healthy seasons of the year.

The difficulties due to the nature of the country in these territories consist in the absence of roads and of cultivation. Rugged mountains, steppes where the grass is taller than a man, thorn jungle, wide rivers with constantly changing depth of water, huge marshes or waterless deserts, make the movement

of troops and their supply difficult to an extent which can only be appreciated by experience. The employment of European transport is quite out of the question. Supplies can frequently only be forwarded by carriers, who must carry their own food in addition to their loads. It is often impossible to employ horses; other pack animals, such as oxen, mules or camels, must take their place, but they cannot usually be employed for the same variety of purposes as the horse. The transport which accompanies or follows a force is therefore often more numerous than the troops themselves, and the latter thereby lose in fighting efficiency and mobility, and become merely an escort to the baggage. These disadvantages may be reduced if the transport can be given some military training, but this requires lengthy preparation. Light mobile supply columns suited to the character of the country must be formed of the vehicles of the country, pack animals, or carriers. This cannot be done by a turn of the wrist. The preparations must be completed before the advance into the interior begins, for they form one of the first conditions of the success of the expedition. General Staff officers, sent out from home ahead of the expedition, undertake the necessary preparatory measures (purchase of draft and pack animals, vehicles, and enlistment of carriers), so far as they cannot be carried out at home before the force starts. Supplies consist chiefly of preserved provisions and rice for the natives; fresh meat can seldom be obtained.

The further troops advance into the interior, the greater are the difficulties of supply. The fewer roads and the more inhospitable the country, the greater will be the expenditure of strength necessary for the protection of the communications. If railways are available the advance will usually take place along them, and they will be used for forwarding supplies, but extensive measures will be necessary to protect the line from destruction by the natives, or by the forces of Nature. The establishment of magazines along the line of march has occasionally been advisable, but it takes a long time to fill them, and under certain conditions this may be much delayed or altogether prevented. If the country

is in a disturbed state the establishment of magazines ahead of the troops will be impossible, but preparations must be made for the subsequent retirement as soon as the line of retreat can be fixed. Natives, who are accustomed to the climate and have fewer requirements can feed themselves in a country which they know well and which is friendly to them, when white troops are reduced to want.

The methods of fighting adopted by the natives must be taken into consideration as well as the climate and the nature of the country.

Since most of the Great Powers have forbidden the import of arms into uncivilised countries much too late, the cupidity of traders has enabled natives to equip themselves with breech-loading rifles and a good supply of ammunition. The gradual disarmament of the native population such as was carried out in the Boer States with the greatest energy and with complete success, before the war with England, will be accompanied by a severe struggle in the German colonies. Still, it must be taken in hand, since an armed and uncivilised native population is an impossibility in a country inhabited by white settlers.

The methods of fighting of savage peoples consist chiefly in skilfully prepared surprises carried out in superior force. They seldom attack with equal numbers, but often maintain an obstinate defence of strongholds which are difficult of access, and display an adaptability for guerilla warfare which is worthy of respect. But it may be said with truth that their occasional successes over troops trained on European principles and commanded by white officers, have been only due to an underestimate of the difficulties and a consequent want of foresight on the part of the Commander. Unjustifiable clemency and confidence towards conquered races, who regard every peace merely as an enforced cessation of hostilities, have caused many a check in the development of our colonies. A Commander must, therefore, keep himself constantly informed both in peace and war, by means of a careful intelligence service, as to the attitude of the population. Reports from native sources should be accepted with mistrust

owing to the cunning and duplicity of native races, and must be confirmed and supplemented by information from settlers, missionaries, and white soldiers, who are acquainted with the language and customs of the natives.

Any attempt to lay down rules for marches, for fighting, for camping and for supply, in accordance with the character of the country and its inhabitants and based on the experiences of campaigns in the colonies, must fail because of the great variety of special conditions in the German colonies, and in other territories beyond the seas. Guiding principles may, however, be deduced from the history of former expeditions, the reports of scientific explorers, and of those acquainted with the conditions of the country; but these cannot replace, and must be modified in accordance with, more recent personal experience.

The following examples may show to what extent it is necessary to supplement the tactical principles laid down in the German regulations:—

In hot countries, measures must frequently be taken similar to those which would be adopted in a European theatre of war in dealing with an insurgent population in a densely-wooded country, or in one where the field of view is equally restricted. The most practicable route should always be chosen, even if it is the most circuitous.

Roads that are seldom used are quickly grown over in the tropics and become impracticable. Only weighty reasons justify the use of a shorter but less serviceable road.

Reconnaissance and a clear field of view on all sides is one of the chief conditions for the security of a march, but the nature of the country and the vegetation in the tropics often necessitate a march in single file. This and the impossibility of reconnoitring to the flanks greatly increase the difficulties and dangers of a march, so that special measures must be taken for security, intercommunication, transmission of orders, and to ensure readiness for action. It is impossible, however, to give any figures as to the strength and composition of, and distance between, the various parts of a column of march even as a general guide. The Commander must always act in accordance with the

situation at the moment and the country in which he is operating. It is essential that reliable soldiers should be dispersed at intervals in the column of carriers, which should be always under a white officer, and which must always be followed by a rearguard.

Owing to the want of satisfactory maps it is not possible to adhere to the rule of dividing to march and uniting to fight in an unknown country where the field of view is limited. Instead, the force should be kept concentrated as much as may be, since it is hardly ever possible to reckon with certainty upon the timely arrival of widely-separated detachments on the battlefield, owing to the difficulties of the country and the unforeseen delays and incidents which result therefrom.

In an engagement troops trained in the European manner must always advance to the attack as soon as possible, for natives rarely offer much resistance to an energetic attack. White troops should only confine themselves to the defensive when in very inferior numbers, or during a retirement. Weapons which savage races do not possess make a great impression upon them. Troops should therefore be provided with a number of machine guns and with light, quick-firing guns. The action will often take the form of a fight in a wood with all its attendant difficulties. Light quick-firing guns are indispensable in the attack or defence of artificially strengthened localities. The personal example of the officers is of even greater importance than in European warfare.

Billeting will seldom be possible; it will usually be necessary to camp so as to be always ready for action. The selection of camping grounds is carried out in accordance with the principles laid down in the Field Service Regulations, paras. 389 to 393, the immediate proximity of water being of special importance. Blankets must be carried by the carriers or on the pack animals, as well as tents, to afford the troops protection against the weather. The want of this protection has a speedy effect upon the health of the troops. The camp must be protected by an abatti, which also affords security against the attacks of wild animals. Outposts must be established all round the camps in comparatively strong numbers to cope with the cunning devices of native races.

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Commanders and troops for service in the Colonies must always be carefully selected, and must be instructed in the special conditions of the country and of its population.

The more technical troops there are with an expeditionary force the better. The many obstacles which Nature opposes to the movements of the troops, to the transmission of orders, and to the forwarding of supplies may be rapidly and permanently overcome by establishing signalling stations, making roads and bridges, and by fortifying posts.

If the theatre of war is similar in character to the countries of Europe and the enemy is to a certain extent civilised, the methods of warfare will approximate to those adopted in Europe. In a country which is difficult to conquer chiefly because of its great extent, but where it is possible to move freely and where the climate is good, it is advisable to employ Mounted Infantry. In this case the horse (or pack-animal) is not used for charging, as with the Cavalry, but is employed as a rapid and steady means of transport, as in the case of the Artillery.

But since bad horsemanship, ignorance of the powers of the horse, and bad horsemastership cause a rapid wastage of horse-flesh, not only should the marine battalions, which are always available for employment abroad, be trained as Mounted Infantry, but a larger number of trained riders and good shots should be practised in Mounted Infantry duties in peace, so as to form a nucleus for mounted corps in the Colonies. Preparations should similarly be made for forming Colonial Artillery.

It is certainly doubtful whether the money for these new formations will be obtainable in the near future owing to the widespread ignorance of the importance of acquiring, maintaining and developing colonial possessions. But in the future the German Empire will not only have to deal with punitive expeditions against insurgent natives in its colonies, but also, as the campaign in China in 1900 has shown, with expeditionary forces on a larger scale. Up till now volunteers have been called for for these expeditions, and, thanks to the spirit of enterprise and adventure in the youth of the country, there has been no lack of response.

But the formation of volunteers in complete units is a complicated and lengthy undertaking, and much valuable time may be lost ere these newly-formed units are ready for service. Germany must, however, be in a position to despatch considerable bodies of troops, in the shortest possible time, across the seas to the threatened point to protect her interests in the event of any important oversea developments. Our strong mercantile marine provides us with sufficient means of rapid transport, but the rapid preparation of large bodies of troops is not yet assured. A suggestion which has recently come from a well-known authority is likely to be of assistance in this.* The German Army Corps quartered on the coast should be so equipped that they can be not only employed in a land campaign in Europe, but are also in a position to despatch rapidly a large force across the sea. For this purpose these Army Corps should be provided with arms, equipment and clothing for a campaign in a tropical country. The large harbours in the Army Corps districts are amply provided with the resources necessary to allow of the troops being quickly embarked. The task of preparing a large part of the Army for this dual rôle must be worked out by the General Staff in conjunction with the administrative authorities.

* "Unternehmungen über See" von L. v. Liebert.

CHAPTER XII.

CONCLUSION.

THE principle that any definite or permanent model for orders, for the movements of Armies, and for the conduct of operations is to be avoided, and that where any specific instruction is laid down it is only to be used as a guide, runs like a red thread through all the regulations of the German Army.

The use of any so-called "approved models," *e.g.*, for the composition of orders, is often satisfactory enough in peace, for they serve to remind the writer of many points which are of importance for the recipient, and which, if forgotten, would affect the comfort of the troops.

But even the best and most complete model is not suitable for every case, and it has always the disadvantage that something unnecessary may be included or something necessary omitted, a mistake in either case.

Though in peace this does not lead to any very serious or irreparable mistakes, there is always the danger of acquiring habits which are unsuitable on active service, and of discouraging originality of thought. For this reason the "normal orders," "normal formations" and "normal forms of attack," which are to be found in many text books and pocket books for every possible case which may arise, should be expressly discouraged, for the right form to meet any particular case will only be lighted upon by chance. A Commander will only issue satisfactory orders when he sees clearly the objective required by the situation, and when he has made up his mind how that objective can be attained in the simplest and best way. But the duties to be carried out in war are often full of responsibility, usually the most difficult

which fall to the lot of mortal man. For it is not the weal or woe of the individual which is at stake, but the lives of hundreds of thousands of men, and the fate of a nation. The man who attempts to remember the model which he has so often tested in peace will surely fail in the hour of trial. The ceaseless progress of the Art of War in all its aspects is continually rendering it necessary to discard as obsolete and impracticable many methods which but a short time before seemed to guarantee success. Every fresh campaign brings with it astonishing phenomena not previously dreamt of, in face of which a Commander who is not accustomed to think for himself in peace stands confounded. But the man who has learnt by ceaseless toil in time of peace to rely upon his own judgment, and has altogether abstained from the use of "normal formations" and "models," will be able to deal effectively in war with unexpected and unprecedented incidents.

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